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ABSTRACT

In a study of 2,546 Georgia children, researchers have established state norms for 8 measures of physical fitness at 3 grade levels. Motor test score percentile rankings for boys and girls in the second, fourth, and sixth grades are given (in 22 tables) for the following tests: (1) jump and reach; (2) sit ups; (3) shape-o-ball (measuring shape recognition, perceptual match, and hand-eye coordination); (4) zig zag run; (5) flexed arm hang; (6) soccer wall volley; (7) sit and reach; and (8) 600 yard walk-run. Percentile norms are also given for tests measuring self concept, reading, and mathematics. Appended are the test battery and rotation, test instructions, and references. (JD)

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MOTOR PERFORMANCE NORMS FOR GEORGIA ELEMENTARY SCHOOL CHILDREN

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MOTOR PERFORMANCE NORMS FOR GRADES 2, 4, AND 6 IN GEORGIA

In a study of 2,546 Georgia children, researchers have established state norms for eight measures of physical fitness at three grade levels. The following tables give the percentile rankings of scores on the motor tests for boys and for girls in the second, fourth, and sixth grades. Similar normative data are given for ages seven through fourteen. Also included are percentiles for these subjects' scores on a self-concept scale and on standardized tests of mathematics and reading. Following the percentile tables are appendices which give a list of the tests employed (Appendix A), the order of rotation (B), and instructions for administering the tests (C). Teachers may, with this information, replicate the testing procedures in order to check their students' performance against the norms for their grades and ages.

In using these data, teachers should bear in mind that some of the performance levels of the Georgia children are below those of children in other parts of the country and that norms of any kind do not necessarily reflect satisfactory achievement. Thus the scores of a given class on any test may exceed the state norms and yet not indicate an optimal outcome for that group of children. These comparisons nevertheless can be of interest and can help a teacher to set priorities for individuals and for groups in the physical education program.

The Testing Project

A questionnaire was sent to the superintendents of all public school systems in Georgia concerning the reading and mathematical tests employed, the economic and geographic make-up of the schools, and the presence of physical education specialists. A stratified random selection of schools was made to achieve a combination which included two from each Georgia Association of Education districts, one having a physical education specialist for at least four years and the other with no specialist during this time. Last-minute rejections from several principals resulted in an adjusted schedule of schools which still reflected the demographics of Georgia: nine schools hired physical education specialists, nine did not; ten schools were considered middle class, eight were economically lower; sixteen schools were located in rural areas, two were in a populace of over 50,000, and one was in a suburban setting; eight schools had gymnasiums, eleven had none.

A schedule was established for testing one school per day. A nucleus of professionals traveled between schools to test and to train local personnel. The order in which the children were tested was determined by local personnel, second grade usually coming first.

The introduction given to the subjects concerned "challenges" to be undertaken. Then, the children were divided into seven groups and rotated in a specific order to vary the muscle groups used and to make fatigue more consistent over the testing period. The 600 yard walk-run was administered last. A more complete description of the project may be obtained from Dr. Margaret A. Jones, HPRD Department, Georgia State University, Atlanta, Georgia, 30303.

Statistical Terms Used In Data

N is the number of cases in a group of data.

Mean is the average of scores for a given group of data.

Standard Deviation (SD) is a measure of variability of a set of scores. Plus or minus one standard deviation describes the middle 68.26 percent of the distribution about the mean. The more the scores cluster around the mean, the smaller the deviation.

Standard Error of the Mean (SE) is the standard deviation of the mean and describes the variability of a statistic over repeated sampling. Usually the greater the number of cases, the less is the standard error and the more accurate (reliable) are the scores obtained.

Median (Mdn) is the point in a distribution above which and below which 50 percent of the scores lie.

Mode (Mo) is that score which occurs most frequently in a distribution.

Skewness (Sk) refers to the symmetry of the frequency distribution and is found when the mean, median and mode fall at different points in the distribution, causing balance to shift to the right or left. In a normal distribution, the mean equals the median and skewness is 0. Negative skewness occurs when scores are massed at the high end or right side of the scale. Positive skewness occurs when larger frequencies are at the low end or left side of the scale.

Fig. 1

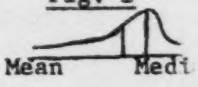


Fig. 2

Kurtosis (K) refers to the flatness of peakedness of a frequency distribution. A normal curve (mesokurtic) is 0.263. If kurtosis is greater than 0.263, the distribution is platykurtic, or flatter. If kurtosis is less than 0.263, the distribution is leptokurtic, or more peaked than normal.

Percentile tells what proportion of the groups scored below that person, i.e., 80th percentile rank means that 80 percent of the people taking the test had scores equal to or lower than that and 20 percent had higher scores. If a score falls between percentile rankings, it is recommended that a student not be given the higher percentile until he/she actually attains it.

TABLE 1

Percentile Norms and Other Normative Data
Jump and Reach (in) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	13.5	16.0	27.0		14.0	16.5	15.5	24.0	27.0	21.0	23.0
98	13.0	15.5	24.0	13.0	13.0	16.0	15.0	22.0	25.0	19.0	
97	12.5	15.0	22.0	12.5	12.5	15.5		17.0	21.0		
96	12.0		19.0	12.0		15.0	14.5	16.5	19.0		
95		14.5	18.0		12.0		14.0		18.0		
94				11.0		14.5		15.5	17.5	18.0	
93	11.5	14.0	17.5					15.0	17.0		22.0
92	11.0		17.0		11.5	14.0					
91							13.5	14.5			
90				10.5	11.0					16.5	
89			16.5			13.5	13.0				
88		13.5		10.0				14.0	16.5		
87	10.5					13.0					
86	10.0	13.0	16.0		10.5				16.0		18.0
85											
84					10.0						
83						12.5	12.5			16.0	
82			15.5						15.5		
81		12.5				12.0					
80				9.5				13.5			
79				9.0							17.0
78	9.5		15.0				12.0				
77								13.0	15.0		
76		12.0	14.5		9.5						
75											
74						11.5			14.5		
73											
72	9.0		14.0								
71						11.0		12.5			16.5
70				8.5					14.0		
69					9.0		11.5			15.5	
68											
67		11.5						12.0			
66											
65											
64			13.5	8.0							16.0
63		11.0					11.0			15.0	
62									13.5		
61			13.0			10.5					
60	8.5										
59											
58									13.0	14.5	
57											15.5
56							10.5				
55					8.5	10.0		11.5			
54		10.5	12.5								
53											
52											
51	8.0						10.0		12.5	14.0	
50		10.0	12.0					11.0			14.0
49					8.0	9.5					
48										13.5	
47									12.0		
46				7.5			9.5			13.0	
45											

TABLE 1 (Continued)

Percentile Norms and Other Normative Data
Jump and Reach (in) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44											
43						9.0					
42		9.5									
41											
40	7.5		11.5				9.0	10.5			
39											
38										12.5	
37					7.5				11.5		
36		9.0		7.0				10.0			12.0
35			11.0								
34											
33						8.5				12.0	
32											
31	7.0									11.0	
30											
29									11.0		11.0
28					7.0	8.0	8.5				
27			10.5								
26								9.5	10.5		
25		8.5		6.5						10.5	
24			10.0								
23										10.0	
22							8.0		10.0		
21		8.0									10.5
20	6.5							9.0			
19											
18						7.5					
17		9.5		6.0	6.5					9.5	
16											
15						7.0			9.5	9.0	
14	6.0	7.5	9.0				7.5				9.0
13		7.0					7.0	8.5			
12								8.0	9.0		
11				5.5	6.0	6.5					
10											
9	5.5					6.0		7.5			
8		6.5	8.5					7.0	8.5	8.5	
7			8.0				6.5				7.0
6	5.0				5.5			6.5	8.0		
5		6.0		5.0	5.0						
4		5.5	7.5			5.5	6.0	6.0		8.0	
3	4.5		7.0		4.5	5.0	5.5		7.5		
2	3.5	5.0	6.5	4.5	4.0	4.0	5.0		7.0	5.5	
1	3.0	2.5	6.0		3.0	3.0	2.5				
N	435	433	321	121	248	200	223	169	147	48	14
Mean	8.299	10.427	12.891	8.033	8.500	10.060	10.222	11.565	13.092	13.510	14.679
SD	2.096	2.604	3.748	1.925	2.065	2.799	2.567	3.375	3.749	3.436	4.602
SE	0.100	0.125	0.209	0.175	0.131	0.198	0.172	0.260	0.309	0.496	1.230
Range	15-0	19-2	31-55	13.5-4.5	15-3	19-2	16-0	29-6	31-7	22-5.5	23-7
Sk	0.169	0.067	1.382	0.717	0.261	0.250	-0.218	1.868	1.551	-0.076	0.229
K	0.819	-0.136	3.784	0.516	0.478	0.132	0.465	7.488	4.666	-0.276	-0.324
Mdn	8.121	10.287	12.242	7.857	8.321	9.875	10.016	11.162	12.600	14.000	14.250
Mo	8.000	9.000	12.000	8.000	9.000	11.000	9.000	11.000	12.000	16.000	14.000

TABLE 2

Percentile Norms and Other Normative Data
for Jump And Reach (in) for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	12.0	14.5	30.0	11.5	12.0	14.0	15.0	18.5	20.0	18.5	13.5
98	11.5	13.5	19.0	11.0	11.5	13.0	14.0	17.0	19.0		
97	11.0	13.0	18.0		11.0	12.5	13.0	16.0	18.0	18.0	
96		12.5	16.0		10.5	12.0		15.0	17.0		
95			15.5				12.5		16.0		
94	10.5		15.0						15.5	17.0	
93		12.0		10.5	10.0	11.5		14.5	15.0		
92	10.0							14.0			
91			14.5	10.0			12.0			16.0	
90		11.5				11.0			14.5		
89					9.5			13.5		15.0	
88	9.5		14.0	9.5		10.5			14.0		
87		11.0						13.0			
86					9.0		11.5			14.5	12.5
85							11.0				
84			13.5								
83	9.0							12.5	13.5		
82		10.5				10.0					
81			13.0	9.0							
80									13.0	14.0	
79											
78								12.0			
77							10.5		12.5		
76		10.0	12.5								
75											
74										13.5	
73				8.5	8.5	9.5					
72	8.5										
71			12.0				10.0	11.5	12.0		10.0
70											
69										13.0	
68				8.0							
67		9.5				9.0					
66								11.0			
65											
64	8.0										
63					8.0						
62							9.5				
61			11.5								
60		9.0								12.0	
59									11.5		
58								10.5			
57			11.0	7.5							
56											
55											
54											
53											
52											
51						8.5		10.0		11.5	
50	7.5			7.0			9.0		11.0		
49					7.5					11.0	
48		8.5	10.5								
47						8.0					
46											
45											

TABLE 2 (Continued)

Percentile Norms and Other Normative Data
for Jump And Reach (in) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44									10.5		
43	7.0										9.5
42		8.0	10.0		7.0		8.5				
41											
40											
39								9.5			
38									10.0		
37							8.0			10.5	
36											
35											
34											
33				6.5		7.5		9.0	9.5		
32					6.5						
31	6.5	7.5									
30			9.5								
29										10.0	9.0
28									9.0		
27			9.0				7.5				
26											
25											
24				6.0		7.0		8.5			
23										9.5	
22	6.0	7.0									
21					6.0			8.0			
20									8.5		
19							7.0				
18											
17						6.5				9.0	
16		6.5	8.5								
15	5.5			5.5	5.5						
14							6.5	7.5			8.0
13											
12	5.0			5.0	5.0	6.0					
11		6.0	8.0						8.0		
10											
9							6.0	7.0			
8									7.5		
7			7.5		4.5	5.5			7.0		
6	4.5			4.5				5.5	6.5	8.0	
5		5.5	7.0								
4		5.0				5.0	5.5	6.0	6.0		
3	4.0		6.5		4.0	4.5		5.0		7.0	
2		4.5	6.0	4.0	3.5	4.0	5.0		5.5		
1	3.5	4.0	5.0	3.0	3.0	3.5	4.5	4.5	5.0		
N	406	392	325	123	138	203	182	183	137	35	7
Mean	7.649	8.876	11.374	7.549	7.607	8.586	9.184	10.525	11.550	12.014	10.357
SD	1.860	2.147	3.642	1.854	1.821	2.030	2.196	2.966	4.684	2.790	1.952
SE	0.092	0.108	0.202	0.167	0.118	0.143	0.163	0.219	0.383	0.472	0.738
Range	14-2	16-3.5	31-4	12-3	12.5-2	16-3.5	16-4.5	30-4	31-5	18.5-7	13.5-8
Sk	0.095	0.356	2.828	0.217	-0.067	0.323	0.371	1.745	2.854	0.565	0.771
K	0.077	0.208	13.076	-0.370	0.078	0.625	0.011	9.569	10.553	-0.113	-0.464
Mdn	7.750	8.837	10.879	7.278	7.793	8.521	9.068	10.156	11.054	11.500	9.875
Mo	8.000	9.000	10.000	7.000	8.000	9.000	9.000	10.000	12.000	9.000	10.000

TABLE 3

Percentile Norms and Other Normative Data
for Sit Ups for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	45	46	52	45	41	46	44	51	54	54	48
98	40	43	50	40	39	44	42	50	47	53	
97	38	42	47	38	37	43	41	48	46		
96	37	40	46	37	36	42	40	46	45	51	
95	36					40		44			
94	35		45	36	35					47	
93	34	39	44	35	34	39	39	43	44		45
92				34						44	
91						38	38				
90	33	38								42	
89			43	33		37	37	42			
88		37		32	33				43		
87						36					
86			42					41	42		43
85	32										
84		36		31			36				
83					32			40		41	
82			41			35					
81	31								41		
80		35					35				
79					31	34		39		40	41
78			40						40		
77											
76	30						34				
75		34				33				38	
74			39						39		
73				29	30						
72								38			
71							33				39
70		33				32			38		
69	29		38							36	
68								37	37		
67					29		32				
66		32									
65				28		31					
64	28		37					36			38
63					28						
62								35			
61									36		
60							31		35		
59	27	31	36		27						
5				27		30				35	
57							30				37
56			35					34			
55		30							34		
54	26				26						
53				26				33	33		
52											
51			34			29					
50				25							33
49	25				25		29		32		
48			33			28		32		34	
47		29									
46				24			28				
45	24	28							31		

TABLE 3 (Continued)

Percentile Norms and Other Normative Data
for Sit Ups for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44			32		24		27	31			
43						27			30		
42		27								33	
41								30			
40				23		26	26				
39		26									
38	23		31		23	25				32	
37							25		29		
36		25	30								32
35	22			22	22			29			
34						24			28		
33				21							
32			29				24	28	27		
31	21	24									
30					21		23	27			
29			28		20	23					31
28		23						26	26		
27	20		27		20		22				
26				19		22					
25								25	25		
24	19	22	26						24		
23				18	19	21	21	24		29	
22											
21	18	21	25		18		20				29
20			24					23	23		
19	17	20			17	20	19			27	
18		19	23	17		19					
17											
16						18	18		22		
15	16	18		16	16			22			
14			22			17	17	21		23	26
13	15	17	21	15	15			20	21		
12			20	14			16	18	20		
11	14		19		14	16					
10	13	16	18		13	15	15	17	19	21	
9	12	15		13	12			16			
8				12		14	14		18	18	
7	11	14	17	11	11		13				13
6	10		16		10		12		17		
5	9	13	15	10	9	13	11	15	15		
4	8	12	14	8		12	10	14	14	15	
3	7	10	13	1	7	10	9	13	11		
2	5	9	11		6	7	8	9	10	14	
1	1	6	9		3	1	6	3	3		
N	434	435	322	120	248	203	222	169	148	43	14
Mean	24.774	28.379	32.932	24.567	24.903	27.798	27.910	31.793	32.182	34.250	34.714
SD	8.231	8.684	9.530	8.491	8.133	8.758	8.794	9.526	9.652	8.864	8.695
SE	0.395	0.416	0.531	0.775	0.516	0.615	0.590	0.733	0.792	1.279	2.324
Range	50-0	52-0	57-3	46-0	50-0	51-0	51-2	52-3	57-3	55-14	46-13
Sk	-0.416	-0.364	-0.449	-0.418	-0.392	-0.373	-0.384	-0.476	-0.325	-0.109	-1.051
K	0.500	0.058	0.012	0.834	0.235	0.308	-0.111	0.016	-0.104	0.654	1.802
Mdn	25.658	29.914	34.125	25.500	25.731	29.200	29.658	32.889	32.786	34.700	33.500
Mo	30.000	30.000	32.000	29.000	30.000	30.000	30.000	39.000	30.000	32.000	33.000

TABLE 4

Percentile Norms and Other Normative Data
for Sit-Ups for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	39	42	51	37	40	40	43	46	50	46	46
98	37	40	46	36	37	39	42	45	47		
97		39	45			37	39	44	46	44	
96	36	38	44					43	45		
95		37		35	36		38	42			
94	35		43	34	35	36		41	44	41	
93			42				37	40	43		
92	34	36	41	33	34	35			41		
91			40	32			36	39		38	
90	33	35	39		33	34			40		
89								38	39	37	
88	32	34	38	31			35				
87						33			38		
86					32				37		31
85	31	33	37	30					36		
84						32	34	37			
83					31					35	
82	30			29			33		36		
81		32	36								
80					30					33	
79						31		36			
78			35								
77	29						32			32	
76								35	34		
75		31		28		30					
74					29						
73		30	34								
72	28							34			
71					28	29	31		33		
70											
69		29	33				30				
68				27				33			
67											
66	27	28			27	66				31	
65									32		
64											
63			32				29	32	31		
62						27					
61					26						
60	26	60	31				28	31			
59				26							
58											
57					25					30	
56						26		30	30		
55											
54	25	26							29		
53			30				27				
52								29			
51				25							28
50	24		29	24	24			28	28		
49		25				25				29	
48							26				
47											
46			28			24				28	
45		24			23						

TABLE 4 (Continued)

Percentile Norms and Other Normative Data
for Sit Ups for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	23			23				27	27		
43									26		25
42							25				
41			27		22	23		26			
40		23								27	
39							23				
38	22		26					25			
37					21				25		
36			25	22							
35	21										
34						22		24		26	
33		22		21	20		22				
32									24		
31	20		24							25	
30											
29		21				21	21			24	24
28											
27								23	23		
26		20	23	20							
25	19				18	20	19		22		
24								22			
23	18	19	22		17						
22											
21	17			19				21			
20					16	19	18	20	21	22	
19		18	21								
18				18		18			20		
17	16				15		17			20	
16		17				17					
15			20	17							
14	15				14		16	19	19		23
13		16			13				18		
12	14		19	16				18	17		
11	13	15	18	15	12	16	15		16	18	
10			17	14		15		17	15		
9									14	15	
8	12	14	16	13	11	14	14	16			
7			15					15	13		
6	11	13	14			13	12			14	
5		12	13	12		12		14	12		
4	10	11			10	11	11	13	11		
3	9	10	11	11	8	8	10	10	8	13	
2	6	9	9	10	5	7	9		4		
1	4	5	4		2	5	5	9	3		
N	404	391	330	123	236	203	132	135	139	35	7
Mean	23.993	25.468	29.052	24.301	23.712	25.217	25.984	28.746	28.453	28.829	28.286
SD	7.639	7.754	8.922	6.408	8.041	7.607	8.276	8.549	9.711	7.917	4.680
SE	0.380	0.392	0.491	0.578	0.523	0.534	0.613	0.629	0.824	1.338	1.769
Range	50-0	46-0	57-0	38-10	43-0	50-0	46-0	51-7	57-0	48-13	36-23
Sk	-0.261	-0.155	-0.119	-0.187	-0.284	-0.233	-0.227	-0.090	-0.050	-0.127	-0.540
K	0.191	-0.150	0.379	-0.335	-0.206	-0.522	-0.232	-0.389	-0.723	0.237	-0.649
Mdn	24.605	25.675	29.583	24.750	24.500	25.615	26.900	28.900	28.444	29.667	28.000
Mo	23.300	23.000	31.000	27.000	25.000	23.000	23.000	24.000	23.000	32.000	31.000

TABLE 5

Percentile Norms and Other Normative Data
for Shape-o-Ball (sec) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	107	83	69	104	98	85	93	75	69	75	75
98	110	88	71	107	109	82	92	76	70		
97	113	94	75	112	112	97	94	77	73		
96	121	98	77	128	117	100	99	82	75	93	
95	127	100	81	129	121	101	104	83	78		
94	130	103	82	130	125	104			80		
93	134	104	83	136	127	107	105	85	84		
92	136	106	85	137	131	110	106	88	87	97	
91	138	108	87		133	113	108	89	88		
90	140	110	90	138	137	114	110	90	89		
89	143	112	91	143	142	115	111	92	90	101	
88	145	113		145	143	117	112	93	91		
87	147	114	92	150	145	119	114	94		102	
86	148	115	93	151	146	120	116	95	92		
85	149	116	94	152	147	121	117	96	93		85
84	150	117	95	153	148		118	97	96		
83	152		96	159	150	122		98	97	106	
82	153	118	97	165	151	124	119	99	99		
81	155	119	98	170	152	125				109	
80	156		99	171	153	126	120	100			
79	158	120			155	127	121	102	100	115	90
78	159	121	100	174		128	124		102		
77	160	122	101		156	129		103			
76	162	124	102	175	158	130					
75	163	125			159	133		104	103	117	
74	166		103	176	160	134	126		104		
73	169	126	104		161	135	128	105	105		
72	170	127		177	165	136	129	107	106		
71	171	128	105	180	166	137	131	108	107		92
70	172	129	106		167	138	132	109	108	121	
69	173	131		181	168		135	110	110		
68	174	132	107		170	139		111	111	125	
67		133	109	182	171	140		112	112		
66	175	135	110	183	172	141	136		113	126	
65	176		112	184	173	142	137	113			
64	178	136	113	185	174	143	138	115	114	127	
63	179	137		187	175	145		116	115		
62	180	138	115	188	176	147	139		117	128	
61					178	148	141	117	118		
60	181	139	116		179	149	143	118	120	129	
59	182	141	117	189	180	151	144				
58	183	142	118	190	181	153		119	121		
57	184	143	119	193	182	155	145		122	130	114
56	185	144	120	194	183	156		120	123		
55	186	145		195	184	158	146			131	
54	187	146	121	197	185	159	147	121	124		
53	188	147		205	187	160	149		125		
52	190	148	122	206	188	161	150		127	132	
51	191	149	123	207	190	162	152	122	128		
50	193	151	124	208	192	163	153	123	129	133	116
49	194	152	125		193	165	155	124			
48	195	153	127	209	195	166	156	125	130		
47	197	155	128		197	168	157	126	131	134	
46	198	156		210	198		158	128	132		
45	199	157	129		199	169	159	129	133	136	

TABLE 5 (Continued)

Percentile Norms and Other Normative Data
for Shape-o-Ball (see) for Boys

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	200	158	130			170		130		137	
43	204	159		211	200	171	160	131	134	138	117
42	205	161	131		203		162	132			
41	206	162		212	205	172		133	135	140	
40	208	163	132	213	207		163	134	137	141	
39	209	164	133	214	209	173	164	135		142	
38	210	165	134	219	210	174	165	137	138	143	
37	211	166			211	175	166	138			
36	212	167	135		212	176	167			144	119
35	213	168	137	220	213	177		139			
34	215	169		223	218	179	168	140	139	150	
33	219	170	138	226	220	180	169	141	140		
32	220	171	139			181		142	141	154	
31	221	172		227	221	182	170	144	142		
30	222	174	140	228	222	183	171	145		157	
29	225	175	141	229	224	186	173	146		158	130
28	226	176	142	234	226	188	175	147	143	159	
27	227	177			227	189	176	148	144	160	
26	232	178	143	235	230	190	177	149			
25	235	179	144	236	236	192	178	150	145	164	
24	236	180	145	237	238	194	179	151	146		
23	237	182	146	238	240		180	152	147	176	
22	238	185	147		241	199	182	153	148		
21	241	186	148	242	244	200	184	155	150	177	136
20	244	188	149	245	246	204	186	156	151	180	
19	246	189	151	247	205	188	158	152	186		
18	251	191	154	252	251	206	189	161	156		
17	255	193	156	253	254	210	191	162	161	192	
16	260	197	157	258	260	211	195	163	193		
15	266	200	161	266	266	216	197	167	186	194	
14	270	201	164	270	268	223	199	174	168	197	149
13	274	204	168	271	276	201	181	172	201		
12	279	206	173	276	279	232	204	183	175	202	
11	282	207	176	288	282	235	206	184	177	203	
10	289	211	183	295	285	236	210	186	182		
9	296	215	186	299	291	237	212	191	183		
8	302	219	192	305	299	242	216	192	184	209	
7	315	224	194	313	306	256	219	201	190		225
6	322	231	202	315	317	261	225	202	199	218	
5	329	234	203	322	323	272	232	208	203		
4	338	243	218	325	338	289	243	211	247	229	
3	367	275	239	329	367	315	276	212	270		
2	407	282	251	390	404	326	282	220	298	254	
1	441	319	274	410	575	333	405	234	344	275	
N	435	435	321	121	248	203	223	169	147	47	14
Mean	208.524	158.536	131.583	212.033	206.198	170.360	161.117	132.314	135.701	147.553	128.429
SD	71.284	46.635	45.015	60.187	72.574	53.386	58.814	37.381	53.687	46.091	48.595
SE	3.418	2.236	2.513	5.472	4.608	3.747	3.938	2.815	4.428	6.723	12.988
Range	88-696	78-409	62-497	104-441	88-607	78-407	79-696	62-251	67-497	72-309	72-239
Sk	2.288	1.503	2.699	1.084	2.163	1.299	4.239	0.936	3.118	1.325	1.474
K	9.730	4.073	14.809	2.032	8.117	2.476	32.099	0.666	15.489	2.268	1.742
Mdn	194.125	151.625	124.625	208.667	192.500	163.750	153.750	123.333	129.000	133.000	116.500
Mo	181.000	139.000	100.000	189.000	160.000	133.000	126.000	113.000	139.000	97.000	114.000

TABLE 6

Percentile Norms and Other Normative Data
for Shape-o-Ball (sec) for Girls

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	111	94	67	123	109	81	95	75	67	87	
98	120	98	74	130	114	94	98	80	70		
97	125	100	79	133	120	97	100	82	72		
96	128	101	80	136	125	100	101	84	75		
95	131	104	81	137	129	105	102	85	76		
94	134	106	83	138	130	107	104	89	79	91	
93	136	107	85	140	131	108	105	90	80		110
92	137	108	86	143	134	110	107		81		
91	140	111	87	144	136	112	111	91	83	92	
90	142	112	88		137	114		92	85		
89	145	113	89	148	140	115	112	94			
88	146	114		154	142	116	113	95	86		
87	147	115	90	156	143	118	114				
86	148	116	91	158	145	119		96	87		
85	150	117	92	159	146	120	115	97			
84	151	118	93	161	147	121	116	98	88		
83	152	119		165	148	122	117			94	
82	153	120	94	167	149	123	118		89		
81	155	121	95	168	150	124	119	99	90		
80	156	122	96	170	151	126	120	100	92	99	
79	157	123	97	172	152		123		93		114
78	159	124	98		153	127	124	101			
77	160	125	99	173	154		125	104	94	102	
76	162	126	100		155	128	126	105			
75	164	127		174	156		127		95		
74	165	128	101		157	129	128	106	98		
73	166		102		158	130		107	100		
72	167	129	103	178	159				101		
71	168		104		160	131	129	108		105	
70	169		105	179	161		130	109	102		
69	170	130		180	162	132	131	110	103	106	
68	172	131	106	184	163	133		111			
67	173	132	107	187	164	134	132		104		
66	174	133		188	165	135	133		106	108	
65	175	134	108	189	166	136	134		107		
64	176		109	190	167	137		112	109		124
63	178	135	110		168	138	135	113	110	109	
62	179	136	111			141		114	111		
61	180			192	169	142	136	115	112		
60	181	137	112	194	170	143	137	116	113	111	
59	183	138		196	171	144	138	117			
58	185	139	113	197	172	145	139	118			
57	187	140	114	198	173		140		114	130	
56	188	141	115	199	174	146	141	119	115		
55	189	142	116		176	147		120	116		
54	190	143		200	178	148	142	121	117	137	
53	191		118	202	180	149		122	118		
52	192	144	119	203	181			124		138	
51	194	145		204	182		143	126	119		
50	196	146	120	205	185	150	144	127	120	142	148
49	197		121		186						
48		147	122	206	187		145	128	121		
47	200	148	123	207	188	151	146		122		
46	201		125	208	189	152	147	130	123	146	
45	202	149	126	209	190	153	148	131	124		

TABLE 6 (Continued)

Percentile Norms and Other Normative Data
for Shape- o — Ball (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	203			210	191	154			125		
43	204	150	127	211	193	155		132	126	147	
42	205	151	128	212	195	156	149				
41		152	129		197	160	150				
40	206	153	130	213	198	161	152	134	127		
39	208	154	131	214	199	162	154	135			
38	209	155	132	215	200	164	155	136	128		
37	212	156	133	216	202	165	156	138	129	143	132
36	213	158	135	217	203	166	157		130		
35	215	160	136	218	204	171	158	139	133		
34	218	161	137	220	205	172	159	140	135	149	
33	220	162	138	223	206	173	161	142	136		
32	222	164	140	226	209	175	163	143	139		
31	225	165	141	227	210	181	164	145	140	153	
30	227	167	142	230	216	183	166	146	141		
29	230	169	143	235	220	185	168	147			
28	231	171	144	238	223	189	171	148	142		
27	233	172	146	243	225	190	172	149	143	154	
26	236	174	147	244	228	192	173	150	144		
25	238	177	148	246	230	194	174	151	146		
24	242	178	149	248	231	195	178	153	150		
23	243	180	150	261	234	198	179	154	151		
22	244	183	151	264	236	199	180	155	156		
21	246	185	152	265	240	200	193	157			
20	253	187	153	273	242	201	185	159	157	163	153
19	256	189		274	243	204	187	162	161		
18	261	191	154	277	244	208	188	163	162		
17	265	194	157	284	247	214	191	166	166	170	
16	271	195	161	286	254	215	195	171	171		
15	274	197	163	295	258	225	197	172	173		
14	283	198	167	296	264	226	198	174	174		
13	286	200	170	303	268	228	199	175	177		
12	293	204	172	309	272	232	201	177	179		
11	295	208	174	320	284	237	205	178	187	186	
10	296	213	177	321	294	245	213	180	192		
9	303	214	178	323	296	253	214	182	194	195	
8	314	220	181	338	297	254	217	186	202		
7	317	225	187	372	303	260	220	188	204		167
6	326	243	195	384	315	271	224	195	210	206	
5	348	254	202	408	326	277	228	205	220		
4	373	264	206	439	354	284	247	213	234		
3	400	283	214	448	364	289	265	217	250	278	
2	412	313	234	480	400	295	292	254	270		
1	448	403	280	500	412	313	324	263	288	303	
N	405	392	329	122	238	203	183	185	138	35	7
Mean	210.714	139.168	128.687	226.090	200.466	168.025	156.907	133.622	130.152	142.000	138.286
SD	69.237	58.220	39.458	80.961	63.710	64.112	52.049	40.564	46.082	49.208	22.051
SE	3.440	2.941	2.175	7.330	4.130	4.500	3.848	2.982	3.923	8.318	8.334
Range	97-513	76-696	65322	122-513	107-439	76-696	85-505	65-351	66-322	87-303	110-167
Sk	1.523	3.759	1.537	1.675	1.400	3.394	2.952	1.757	1.509	1.594	-0.207
K	2.945	24.201	3.865	2.845	2.077	22.483	14.337	5.602	2.935	3.289	-1.846
Mdn	196.333	146.100	120.800	205.500	185.000	150.188	144.333	127.750	120.750	142.000	148.000
Mo	206.000	129.000	112.000	174.000	170.000	150.000	149.000	112.000	127.000	154.000	110.000

TABLE 7

Percentile Norms and Other Normative Data
for Zig Zag Run (sec.) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	24.0	22.4	21.6	23.0	24.3	22.2	23.0	21.9	21.6	21.8	23.0
98	24.8	22.8	21.7	24.1	24.9	23.1	23.1	22.0	21.7		
97	24.9	23.1	21.9	24.7	25.0	23.6	23.3	22.4	22.0		
96	25.0	23.4	22.3	24.9	25.1		23.5	22.5	22.4	22.0	
95	25.1	23.6	22.5		25.2	23.9	23.6	22.6	22.5		
94	25.3	23.8	22.6	25.0	25.3	24.1	23.7	22.7	22.6		
93	25.4	23.9	22.7	25.6		24.3	23.9	22.8	22.7		
92	25.5	24.0	28.8	26.0	25.4	24.4			22.9	22.4	
91	25.6	24.1			25.5	24.8	24.0	22.9			
90	25.7	24.2	22.9	26.1		24.7	24.1				
89	25.9	24.3		26.2	25.6	24.8	24.2	23.0		22.5	
88		24.4		26.5	25.9			23.1			
87	26.0					24.9					
86	26.3	24.5			26.0		24.3	23.2			23.1
85	26.5	24.7		26.6	26.4		24.4			22.8	
84			23.0	26.7	26.5		24.5	23.3	23.0		
83	26.6	24.8		26.8	26.6	25.0	24.6	23.4		23.0	
82	26.7		23.1		26.7	25.2	24.7	23.5	23.1		
81	26.8	24.9		26.9	26.8			23.6	23.2		
80	26.9		23.2		26.9	25.4	24.8				
79				27.0	27.0					23.1	23.2
78			23.3			25.5	24.9	23.7	23.3		
77	27.0					25.6		23.8	23.4	23.2	
76	27.1		23.4	27.1	27.1						
75		25.0		27.4				23.9		23.4	
74	27.2	25.1	23.5		27.2	25.7		24.0	23.5		
73	27.3	25.2	23.6	27.5	27.3				23.6		
72	27.4	25.3			27.4	25.8	25.0	24.1	23.7		
71		25.4			27.5		25.1	24.2	23.8		23.3
70	27.5	25.5	23.7	27.7	27.6	25.9	25.2		23.9	23.5	
69	27.6		23.8				25.3				
68			23.9	27.8			25.4			23.6	
67	27.7	25.6		27.9	27.7		25.5				
66	27.8	25.7		28.0	27.8	26.0		24.3		23.7	
65	27.9			28.1	27.9			24.4			
64				28.2		26.1	25.6	24.5	24.0		
63		25.8	24.0	28.4			25.7	24.6	24.1		
62	28.0	25.9						24.7	24.2		
61						26.2	25.8	24.8			
60	28.1		24.1		28.0	26.3	25.9	24.9		23.8	
59	28.3	26.0	24.2	28.5	28.1	26.4					
58	28.4				28.2				24.3		
57	28.5	26.1		28.6		26.5	26.0			24.0	24.0
56	28.6				28.3	26.6			24.4		
55	28.7	26.2	24.3	28.7	28.6	26.7	26.1	25.0			
54			24.4	28.8					24.5		
53	28.8	26.3			28.8	26.8	26.2	25.1		24.3	
52	28.9		24.5	28.9		26.9		25.2	24.6		
51			24.6	29.0	28.9		26.3	25.3	24.7		
50		26.4	24.7			27.0		25.4	24.8	24.8	24.7
49	29.0		24.8						24.9		
48	29.1	26.5	24.9	29.1	29.1	27.1		25.5			
47	29.2			29.2	29.2		26.4	25.6		24.9	
46	29.3	26.6			29.3	27.2		25.7	25.0		
45	29.4	26.7					26.5		25.1		

TABLE 7 (Continued)

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44		26.8		29.3	29.4	27.3		25.8			
43			25.0	29.4	29.5	27.4	26.6		25.2		
42	29.5	26.9	25.1		29.9		26.7	25.9	25.3		
41	29.6					27.5	26.8		25.5	25.0	
40	29.7		25.2	29.5							
39	29.8		25.3			27.6	26.9	26.0	25.6		
38	29.9		25.4	29.6				26.1			
37		27.0	25.5	29.7	30.0	27.7					
36		27.1		29.8	30.1	27.9	27.0	26.2		25.2	25.0
35	30.0	27.2	25.6	29.9	30.5		27.1	26.3	25.7		
34	30.4				30.6	28.0	27.2	26.4	25.8	25.6	
33	30.6	27.3	25.7	30.0	30.7	28.1		26.5	25.9		
32	30.7	27.4	25.8	30.1	31.0	28.3	27.3	26.6		25.7	
31	30.8	27.5		30.4	31.1	28.4		26.7			
30	30.9		25.9	30.7	31.2	28.5	27.4	26.8	26.0		
29	31.0	27.6		30.8		28.7	27.6	26.9	26.1		26.0
28	31.1	27.7				28.8	27.9		26.3	26.0	
27	31.2	27.9	26.0	30.9	31.4	28.9			26.4		
26	31.3		26.1	31.0					26.5		
25	31.4		26.3	31.1					26.6		
24	31.5	28.0	26.4	31.2	31.6	29.0		27.0	26.7		
23		28.2	26.5		31.9		28.0	27.1		26.1	
22	31.6	28.4	26.6			29.2	28.1	27.2	26.8		
21	31.8	28.6	26.8	31.4		29.4	28.4	27.3	26.9		26.1
20	31.9	28.8	26.9		32.0	29.5	28.6	27.5	27.0		
19	32.0	28.9			32.4	29.6	28.9	27.6	27.2	26.9	
18	32.4			31.6	32.8	29.7		27.8	27.4		
17	32.7	29.0	27.0	32.0	33.0	29.8	29.0		27.5	27.0	
16	32.8	29.1	27.2	32.1	33.1	29.9	29.2	27.9	27.6		
15	33.0	29.2	27.5	32.2	33.4	30.2		28.0		27.2	
14	33.1	29.3		32.5	34.0	30.8	29.3	28.1	27.8		26.8
13	33.3	29.4	27.6	32.6	34.2		29.4	28.3	27.9	27.9	
12	33.9	29.6	27.8	32.7	34.7	30.9	29.6	28.4	28.0		
11	34.2	29.7	27.9	33.0	34.8	31.0	29.8	28.8	28.1	28.0	
10	34.8	29.8	28.0	33.3	34.9	31.1	29.9	29.0	28.2		
9	34.9	30.1	28.1	34.5	35.0	31.8		29.1	28.5	28.5	
8	35.0	30.2	28.2	35.2	35.2	32.7	30.0	29.3	28.7		
7	35.2	30.8	28.5	35.3	35.6	32.9	30.7	30.0	28.8	28.8	27.6
6	35.7	30.9	28.8	35.5	35.7	33.0	30.8	30.2	28.9		
5	35.9	31.0	28.9	35.8	37.1	33.1	31.0	30.7	29.0		
4	37.1	31.7	29.0	36.0	38.0	33.8	31.2	31.0	29.1	28.9	
3	38.4	32.5	30.0	36.1	39.5	34.0	32.4	31.7	29.6		
2	39.7	32.9	30.8	36.8	41.1	35.0	32.5	32.7	30.8		
1	42.6	34.0	32.0	38.4	42.6	39.0	35.0	33.0	31.4	29.0	
N	408	437	321	119	236	202	224	170	147	47	14
Mean	29.769	26.877	25.147	29.516	29.847	27.639	26.854	25.838	25.277	24.957	24.964
SD	3.834	2.471	2.156	3.192	3.935	3.031	2.937	2.537	2.192	2.092	1.670
SE	0.190	0.118	0.120	0.293	0.256	0.213	0.196	0.195	0.181	0.305	0.446
Range	22.8	20.6	21.0	23-43.2	22.8	20.6	22.8	21.8	21-32	21.6	22.9
	-54.0	-41.0	-33.2		-51.4	-42.1	-54.0	-36.0		-29.3	-27.8
Sk	1.862	1.272	0.994	1.128	1.578	1.478	3.958	1.109	0.741	0.502	0.437
K	6.708	3.578	1.137	2.410	4.283	3.915	32.139	1.570	0.200	-0.615	-1.067
Mdn	29.020	26.446	24.720	29.087	28.983	27.030	26.372	25.417	24.971	24.800	24.750
Mo	29.500	25.000	23.000	26.600	30.000	26.000	25.000	25.000	23.000	25.000	24.000

TABLE 8

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Girls

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	25.1	23.5	22.8	25.5	25.0	24.0	23.8	23.3	23.0	24.8	
98	25.7	24.0	23.1	26.0	25.4	24.4	23.9	23.0	23.3		
97	25.9	24.2	23.4	26.1	25.9	24.5	24.1	23.2	23.4		
96	26.0	24.3	23.7	26.5	26.0	25.1	24.3	23.6	23.1		
95	26.5	24.4	23.8	26.6	26.1	25.3	24.4	23.7	23.3		
94	26.7	24.5	23.9	26.9	26.5	25.5		23.8	23.9		
93	26.9	24.6	24.0	27.0	26.7	25.6	24.5	23.9	24.0		24.2
92	27.0	24.8	24.1		26.9	25.7	24.6		24.1		
91	27.2	25.0	24.2	27.8	27.0	25.8	24.7	24.0	24.2		
90	23.7	25.1			27.1	26.0	24.8			25.0	
89	27.5	25.3	24.3	27.9				24.2	24.3		
88	27.6	25.4	24.4		27.2	26.1	24.9	24.3			
87	27.7	25.5	24.5		27.3	26.2	25.0	24.4	24.4		
86	27.8	25.6	24.6	28.0	27.4	26.3		24.5			
85	27.9	25.7	24.7	28.1	27.5	26.4	25.3	24.6	24.6		
84	28.0	25.8			27.6	26.5	25.4				
83			24.8	28.2	27.7	26.6	25.5	24.7	24.7	25.3	
82	28.1				27.8	26.7	25.6		24.8		
81	28.2	25.9			27.9		25.7				
80	28.3	26.0	24.9	28.4		26.8	25.8	24.9			
79		26.1		28.5	28.0	26.9	25.9				25.2
78	28.4	26.2			28.1			25.0	24.9		
77	28.5	26.3			28.2						
76		26.4		28.6	28.3			25.1			
75	28.6		25.0	28.7	28.4		26.0				
74	28.7	26.5		28.8			26.1			25.8	
73			25.1	28.9	26.5	27.0		25.2			
72	28.8	26.6			28.6	27.1	26.2				
71	28.9	26.7			28.7	27.2		25.3	25.0	26.0	
70		26.8	25.2			27.6	26.3	25.4			
69	29.0		25.3	29.0	28.8	27.7	26.4	25.5	25.1		
68	29.1	26.9	25.4	29.2	28.9	27.8					
67	29.2		25.5	29.5				25.6	25.2		
66	29.4		25.6	29.6	29.0	27.9	26.5	25.7	25.3	26.4	
65	29.5			29.7	29.1				25.4		
64		27.0	26.7	29.8	29.2				25.5		26.5
63	29.6	27.1		29.9	29.3	28.0	26.6		25.6	26.5	
62	29.7	27.2		30.0	29.4	28.1	26.7	25.8	25.7		
61		27.4	25.8		29.5		26.8	25.9			
60	29.8	27.5	25.9	30.1	29.6	28.2			25.8	26.7	
59	29.9	27.6		30.2	29.7		26.9		25.9		
58		27.7		30.3		28.3	27.0	26.0			
57		27.8		30.4		28.4	27.1	26.1		26.9	
56	30.0		26.0	30.5	29.8		27.2				
55	30.1	27.9	26.1	30.6	29.9	28.5	27.3	26.2	26.0		
54	30.2						27.5		26.1		
53	30.3	28.0	26.2	30.7	30.0	28.6	27.6	26.3	26.2		
52	30.5		26.3	30.8	30.1	28.7	27.7		26.3		
51	30.6				30.2	28.8	27.8	26.4	26.4		
50	30.7	28.1	26.4	30.9	30.3	28.9	27.9	26.6	26.5	27.0	27.0
49	30.8		26.5		30.4			26.7	26.8		
48		28.2	26.6	31.0	30.5	29.0		26.8			
47	30.9	28.3	26.7		30.6			26.9	26.9		
46		28.4	26.8	31.1		29.1				27.1	
45		28.5			30.7	29.2	28.0				

TABLE 8 (Continued)

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	31.0	28.6	26.9	31.7	30.8	29.3	28.1				
43	31.1	28.7		31.9	30.9	29.4			27.0		
42	31.2	28.8			31.0	29.5	28.2	27.0			
41	31.3	28.9		32.0	31.1	29.7	28.3		27.1		
40	31.5		27.0		31.2	29.9	28.4	27.1		27.5	
39	31.6						28.5	27.3			
38	31.7		27.1	32.1	31.3		28.6		27.4		
37	31.8	29.0	27.2	32.2	31.4		28.8		27.5	27.9	28.0
36	31.9	29.1	27.3	32.3	31.5		28.9	27.4	27.8		
35		29.2	27.4	32.5	31.6	30.0		27.5			
34	32.0	29.3	27.5		31.8			27.6		28.0	
33		29.4	27.6	32.8	31.9	30.1		27.8	27.9		
32	32.1	29.6	27.8	32.9		30.2		27.9			
31	32.3	29.8	27.9	33.0	32.0	30.3	29.0	28.0			
30	32.6	29.9	27.9	33.1	32.1	30.5	29.1	28.1			
29	32.7			33.2	32.4	30.6	29.2	28.3		28.1	
28	32.8			33.3	32.8	30.7	29.4	28.4	28.0		
27	32.9	30.0	28.0		32.9	30.8	29.6		28.2		
26	33.0	30.1	28.1			30.9	29.8	28.5	28.4	28.3	
25	33.1		28.2	33.5			29.9	28.8	28.5		
24	33.2	30.2	28.3	33.6	33.0	31.0			28.6		
23	33.3	30.3	28.4	33.9	33.1	31.3		28.9		28.6	
22	33.5	30.5	28.5	34.0	33.3	31.4	30.0	29.0			
21	33.6	30.6	28.6	34.3	33.4	31.5	30.1	29.2	29.0		
20	33.9	30.8	28.7		33.6	31.6	30.2	29.3	29.1	28.7	
19	34.0	30.9		34.4	33.8	31.7	30.3	29.6			
18	34.2	31.0	29.0	34.5	34.0	31.8	30.4	29.7			
17	34.3	31.1	29.1	34.6	34.2	31.9	30.5	29.8	29.3	29.0	
16	34.4	31.2	29.2	34.7	34.4		30.8	29.9	29.4		
15	46.6	31.3	29.4	35.0	34.5		30.0		29.7		
14	34.8	31.5	29.5	35.2	35.0	32.0	31.0	30.0	29.9	29.2	
13	35.1	31.6	29.6	35.4	35.5	32.1	31.2	30.1			
12	35.5	31.9	29.7	35.7	35.7	32.2	31.3	30.4			
11	35.8		29.8	35.9	36.0	32.3	31.5	30.9		29.3	
10	36.1	32.0	29.9	36.0	36.2	32.6	31.6	31.0	30.0		
9	36.3	32.1	30.0	36.4	36.4	33.1		31.1	30.2	29.8	
8	36.8	32.2	30.5	36.8	37.4	33.4		31.3	30.6		
7	37.7	33.0	30.7	38.0	37.8	33.9	32.0	31.6	30.7		37.0
6	38.0	33.3	30.9	38.4	38.0	34.0	32.8	31.7	30.8	30.0	
5	38.4	33.3	30.9	38.8	38.3	34.4	33.1	32.0			
4	38.9	34.0	31.3	39.7	38.7	34.9	33.7	32.3	31.0		
3	39.7	34.9	32.0	40.7	39.3	35.0	34.1	33.4	31.7		
2	42.1	35.3	32.3	32.3	43.5	40.3	35.3	35.0	34.0	32.0	
1	44.2	37.1	33.5	45.9	44.2	36.3	37.8	35.0	33.0	30.8	
N	387	392	329	115	235	203	183	185	138	35	7
Mean	31.315	28.538	26.894	31.761	31.105	29.250	28.140	27.159	26.943	27.320	28.086
SD	3.840	2.844	2.346	4.019	3.924	2.782	2.845	2.744	2.345	1.373	4.222
SE	0.195	0.144	0.129	0.375	0.256	0.195	0.210	0.202	0.200	0.294	1.59
Range	20–49	23.3 – 39.1	21.9 – 37	25.3 – 47.3	20 – 49	23.3 – 38.9	23.5 – 39.1	21.9 – 38.0	22.9 – 33.5	24.8 – 31.0	24.2 – 37.0
Sk	1.272	0.791	0.843	1.356	1.236	0.581	1.040	0.999	0.540	0.347	1.924
K	2.928	0.864	0.950	2.683	2.842	0.268	1.758	1.256	-0.457	-0.646	4.319
Mdn	30.740	28.172	26.442	30.994	33.333	28.925	27.912	26.575	26.500	27.033	27.000
Mo	32.000	27.000	27.000	31.761	28.000	27.000	29.000	27.000	25.000	24.800	24.200

TABLE 9

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Boys

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	9	9	10	11	12	13	14
99	64	75	89	52	70	75	75	78	80	80	80
98	52	69	77	46	53	57	68	76	75	64	
97	49	60	75	41	50	55	60	72	70	65	
96	47	57	70	38	48	52	53	70	65	64	
95	46	53	66	37	47	50	50	66	63	63	
94	44	50	63	34	46	49	49	62	58	62	
93	41	48	62	33	45	46	47	59	57		61
92	36	47	58	32	41	42	46	57	55	60	
91	34	46	56		37	39	44	55	51		
90	33	45	55		36	38		53	50		
89		43	53		34	37	43	51	49	57	
88		42	51	31	33	36	42	50	48		
87	32	41	50	30	32	35	40	49	47	56	
86	31	40	48	29	31		39	48	46		62
85	30	38	46			34	38	47	44	51	
84	29		44	28	30			46	42		
83		37	43	27	29	33	37	45	41	46	
82	28	36	42		28		36	44		45	
81		35	41			32	35	41	40	44	
80	27		40	26	27			40	39	43	
79		34					34	39	38	42	
78	26	33	39	25	26	31	33	38		41	57
77			37				31	37	37	40	
76	25	32	36		25				36		
75		31		24		30		36	35	39	
74	24		35	23	24		30	35		38	
73			34					34	34		
72		30				29	29	33		37	
71	23		33		23	28					43
70		29	32	22	22		28	32	33	36	
69	22						27	31			
68		28	31	21		27	26	30	32	35	
67	21	27			21			29	31	34	
66			30	20		26	25			33	
65		26	29	19			24		30	32	
64	20			18	20			28		31	22
63		25	28	17		25		27	29	30	
62		24								29	
61	19		27		19	24	23	26	28	28	
60										27	
59			26				22	25	27		
58	18	23		16		23			26		
57			25		18		21	24		26	20
56		22									
55			24	15				23		24	
54	17					22	20	22	25		
53		21	23						24	23	
52					17			21			
51	16	20	22	14	16	21					
50									23		19
49		19	21				19	20	22	22	
48	15					20					
47				13	15						
46							18	19	21		
45			20			19		18		21	

TABLE 9 (Continued)

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44		18									
43	14			12		18	17	17		20	
42			19		14				20		16
41		17	18			17	16				
40	13	16			13		15			19	
39			17					16	19		
38				11		16				18	
37		15							18		
36	12		16	10	12				17		14
35						15		15	16		
34							14			17	
33			15						15		
32	11	14					13				
31			14	9	11			14	14		
30		13				14	12			16	
29				8					13		13
28	10		13			13	11	13		15	
27		12							12		
26			12		10	12			11	14	
25							10	12		13	
24	9	11	11								
23					9	11			10	12	
22	8		10	7			9		9		
21				6	8			11	8		8
20		10	9			10			7		
19	7				7		8	10		11	
18		9	8								
17	6		7			9		9	6	10	
16		8		5	6				5		
15						8	7			9	
14			6			7		8		8	6
13	5	7	5		5	6	6			7	
12		6		4				7	4	6	
11			4							5	
10							5	6	3		
9	4	5	3			5	4	5	2	4	
8		4	2		4		3	4			
7		3		3		4	2	3			1
6	3	2	1			3	1	2	0	2	
5		1		2	3	1	0	1		1	
4	2			1	2	0		0		0	
3	1			0							
2					1						
1					0						
N	435	435	321	121	248	203	222	170	147	47	14
Mean	18.526	23.226	26.251	16.831	19.009	22.558	22.272	26.100	25.788	28.100	30.943
SD	13.422	16.396	20.037	12.902	13.836	15.525	16.179	19.557	19.198	20.052	26.681
SE	0.644	0.786	1.118	1.173	0.879	1.090	1.086	1.500	1.583	2.925	7.131
Range	90-0	90-0	90-0	90-0	88-0	90-0	86-0	90-0	90-0	90-0	89-1
Sk	1.614	1.258	1.098	1.960	1.605	1.597	1.164	1.135	0.979	0.936	0.949
K	4.387	2.455	1.130	7.793	3.835	5.009	1.804	1.111	1.172	0.664	-0.174
Mdn	15.965	20.008	22.012	13.975	16.007	20.967	19.350	20.970	23.000	22.800	19.900
Mo	4.000	0.000	0.000	6.000	5.000	0.000	0.000	0.000	0.000	0.000	1.000

TABLE 10

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	54	61	62	50	54	55	60	62	56	50	27
98	50	55	59	44	51	49	55	61	46		
97	45	49	55	42	49	42	49	60	43	45	
96	42	45	48	40	44	40	46	59	38		
95	40	43	45	35	40	39	45	55	36		
94	38	41	42	34	38	37	44	49	35	32	
93	35	40	40	33	37	36	43	46	32		
92	34	38	38	32	35	34	42	45	31		
91	32	36	35	31	32	33	41	42	30	27	
90	34	32	30	31	32	39	40	29			
89	30	33	31	29	30	31	37	39	27		
88	29	32	30	28	29		36	35	26	23	
87	28	31	29	27	28	30	35	33	25		
86	27	30	28	26	27	29	33	32	24		18
85	25	29	27	25	26	28	32	31			
84	25	28	26	24	24	27	31	30	23		
83	24	27	25		23	26	30	29	22		
82			24			25	29			22	
81	23	26		23	22	24		28			
80	22	25		22		23	28				
79		24			21	22	27	27	21	19	
78		23	23			21		26	20		
77	21	22			20	20	26	25		18	
76		21	22	21			25	24	19		
75	20			20	19		24		18		
74		20				19	23				
73	19		21				22				
72			20	19	18			23			
71	18	19	19			18	21		17	17	17
70								22			
69		18	18	18		17	20				
68	17				17					16	
67		17				16	19	21	16		
66				17	16	15					
65			17					20			
64	16	16					18	19			
63					15		17	18	15		
62	15	15	16						14		
61										15	
60				16	14	14	16	17			
59									13		
58	14				13					14	
57				15		13	15				12
56	13	14	15					16			
55									12		
54		13									
53			14			12	14			13	
52				14							
51							13				12
50	12		13	13	12			15	11	11	
49		12									
48						11					
47			12				12				
46									10		
45	11	11		12	11	10		14			

TABLE 10 (Continued)

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Girls

%tile	Grade Level: Second	Fourth	Sixth	Age in Years: 7	8	9	10	11	12	13	14
44			11								
43							11	13			11
42		10									
41				11	10				9	10	
40	10		10			9	10				
39		9						12			
38				10						9	
37							9				
36						8		11			
35			9						8	8	
34	9	8			9			10			
33						7			7		
32				9						7	
31							8				
30			8					9			
29		7			8					6	
28	8								6		
27											
26			7	8		6	7	8			
25		6									
24					7					5	
23	7						6				
22											
21			6						5		
20		5		7			5	7			
19						5					
18							4		4	4	
17	6	4			6						
16			5	6		4					
15					5			6		3	
14	5			5			3		3		6
13		3				3					
12			4					5	2		
11	4	2			4	2	2				
10				4							
9			3						1	2	
8					3						
7	3	1	2			1	1	4	0		
6		0	1	3	2	0				1	
5	2				1		0				
4	1		0	2	0						
3	0			1				3		0	
2				0				0			
1											
N	403	391	327	121	237	203	182	184	138	34	7
Mean	15.580	15.962	16.481	15.745	15.302	14.832	17.418	19.112	14.046	14.341	14.506
SD	12.580	13.977	13.784	10.982	12.147	12.735	15.481	15.296	12.070	12.288	6.740
SE	0.604	0.707	0.762	0.998	0.789	0.894	1.147	1.128	1.027	2.107	2.548
Range	86-0	90-0	90-0	63-0	73-0	84-0	90-0	90-0	72-0	58-0	27-6
Sk	1.900	1.673	1.798	1.427	1.724	1.702	1.660	1.662	1.745	1.834	0.827
K	4.681	3.798	4.291	2.811	3.746	4.431	17.418	3.168	4.449	4.337	0.891
Mdn	12.040	12.275	13.040	13.100	12.045	11.957	13.017	15.050	11.050	11.050	12.300
Mo	7.000	0.000	0.000	15.000	12.000	0.000	0.000	5.000	0.000	3.000	11.000

TABLE 11

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	34	44	51	32	35	43	44	50	48	52	48
98	33	42	49	31	34	42	40	49	46	51	
97	32	41	47	30	33	41	39	47	45	50	
96		39	46	29	32	33	38	45		49	
95	31	38	45				37	44	44		
94			44	28	31	37		43		42	
93	30			27				42	43		
92	29		43		30	36	36		42	40	44
91		37	42					41			
90		36			29		35		41		
89						35					
88	28		41	26				40		39	
87		35			28			39	40		
86			40				34	38			
85	27			25							42
84							33				
83		34		24	27	34					
82			39					37	39		
81	26										
80		33					32				
79						32				38	
78			38		26						
77	25	32									38
76						31		36	38		
75					25						
74				23							
73			37				31		37		
72								35			
71		31									
70	24					30					
69										37	35
68			36					34	36		
67					24						
66						29	30				
65										36	
64		30									
63			35	22							
62									35		
61	23										
60								33			
59						28	29				
58					23					35	
57		29	34								
56				21						34	
55									34		
54								32			
53											
52											
51	22		33				28		33		28
50		28				27				33	
49				20							
48					22						
47						26		31	32		
46			32							32	
45											

TABLE 11 (Continued)

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44									31		
43	21	27					27			31	
42			31								
41				19							
40								30			
39											
38					21						
37		26				25				30	
36									30		
35	20		30				26				
34								29			
33									29		
32											
31											24
30			29			24	25	28			
29		25									
28				18	20						
27	19							27		29	
26						23					
25			28				24		28		
24		24				22					
23								26			22
22				17	19						
21										28	
20	18										
19		23	27			21		25	27		
18					18		23				
17										27	
16			26	16					26		
15	17	22				20					21
14								24	25		
13			25				22			26	
12		21			17						
11							21			25	
10	16			15				23			
9		20	24		16	19	20		24	24	
8							19		23	23	15
7	15	19	23	14		18			22		
6								22		22	
5	14	18	22	13	15		18		21		
4	13				14	17	17	21		21	
3		17	21		13	16	16	20	20		
2	12	16	20	12	11	15	15	19		20	
1	11	14	18	11	8	12	14	15	18		
N	434	437	319	121	247	203	224	169	146	48	13
Mean	22.431	28.634	33.458	20.950	22.899	27.517	28.326	32.124	33.233	33.688	31.385
SD	4.945	6.121	6.943	4.457	5.028	6.437	5.827	6.864	6.906	7.066	9.879
SE	0.237	0.293	0.389	0.405	0.320	0.452	0.389	0.528	0.572	1.020	2.740
Range	37-7	50-22	57-15	33-11	36-7	48-12	48-13	52-15	57-18	53-20	48-15
Sk	0.138	0.259	0.323	0.302	-0.006	0.352	0.083	0.432	0.202	0.602	0.134
K	0.216	0.384	0.178	-0.009	0.436	0.189	0.584	0.277	0.149	0.901	-0.868
Mdn	22.332	28.515	33.263	20.667	22.729	27.050	28.389	31.875	33.214	33.167	28.333
Mo	23.000	26.000	31.000	19.000	21.000	26.000	28.000	34.000	31.000	30.000	28.000

TABLE 12

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Girls

%ile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	32	41	43	23	31	39	42	42	43	40	45
98	29	39	41	27	29	35	40	40	41		
97	28	38	40		28	32	39	39	40	39	
96		36	39	26			37		39		
95	27	35	38	25	27		36	38	37		
94		34				31				37	
93	26	33	37								
92					26		35	37	36		
91		32				30	34				
90	25		36		25		33		35		
89				24				36		36	
88		31	35								
87				23			32	35			
86	24				24	29				33	37
85		30									
84							31				
83							28	34			
82	23		34						34		
81				22	23						
80							30			31	
79											
78		29				27					
77			33					33	33	30	
76	22										
75				21	22						
74		28					29	32			
73			32								
72									32		
71								31		28	32
70	21					26					
69			31								
68				20	21		28				
67		27									
66									31		
65											
64								30			
63						25					
62			30								
61	20										
60							27				
59		26		19		24			30		
58					20			29			
57										27	
56											
55			29								
54						23					
53											
52											
51		25									
50	19						26	28	29		31
49			28			22					
48					19						
47				18							
46		24						27		26	
45									28		

TABLE 12 (Continued)

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44							25				
43	18										30
42		27									
41		23				21					
40					18						
39								26			
38									27		
37							24				
36			26	17							
35											
34	17	22							26		
33						20					
32					17		23	25			
31										25	
30											
29										24	28
28		21	25	16							
27											
26						19	22	24	25		
25											
24	16										
23			24		16					23	
22		20		15				23			
21							21				
20						18			24		
19											
18			23				20				
17	15							22	23		
16		19									
15					15						
14				14		17					24
13			22				19				
12								21	22		
11	14	18								20	
10					14						
9			21							18	
8						16	18				
7	13			13				20	21		
6		17		12	13			19			
5	12		20					18			
4			19	11	12		17		20		
3	11	16	18		10	15		17	19	17	
2	10	15		10	9	13	16		18		
1	9	14	17		6	12	14	16			
N	406	392	327	123	238	203	183	184	137	35	7
Mean	19.586	25.314	29.000	18.902	19.773	23.419	26.377	28.549	29.212	27.543	32.429
SD	4.586	5.704	5.710	4.128	4.519	5.423	5.847	5.997	5.480	5.812	6.803
SE	0.228	0.288	0.316	0.372	0.293	0.381	0.432	0.442	0.468	0.982	2.571
Range	38-6	46-13	48-16	32-10	34-6	41-11	46-13	48-15	44-18	41-17	45-24
Sk	0.444	0.557	0.288	0.249	0.210	0.488	0.490	0.234	0.185	0.512	1.022
K	0.817	0.385	-0.130	0.149	0.480	0.253	0.436	-0.180	-0.231	0.228	1.327
Mdn	19.284	25.208	28.705	18.750	19.66	22.750	26.200	28.500	29.222	26.875	31.000
Mo	17.000	27.000	26.000	18.000	20.000	27.000	28.000	29.000	26.000	26.000	24.000

TABLE 13

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	37	38	38		37	37	38	41	38	40	38
98	35	37		35	36	36	36	38	36	38	
97	34	35	37	34	35	35	35	37	34		
96			36		34		34	36		37	
95		34				34					
94	33		35	33	33			35	33	36	
93			34								
92		33				33	33	34		35	38
91				32			32		32		
90	32	32			32						
89			33					33			
88				31		32			31	34	
87	31				31		31				
86		31									
85			32			31		32			36
84				30							
83	30									33	
82					30				30		
81											
80		30					30				
79			31		29	30		31			
78											
77	29									32	32
76									29		
75		29				29	29	30			
74											
73			30	29							
72											
71					28		28				
70	28	28				28		29			
69			29						28	31	
68											
67											
66				28							
65								28		30	
64					27						
63	27		28				27				
62											
61		27				27					
60									27		
59								27			
58										29	
57			27	27						28	
56							26			27	
55	26				26	26			26		
54		26									
53											
52											
51				26						26	
50			26					26			31
49						25	25		25		
48		25								25	
47	25										
46					25						29
45			25						24		

TABLE 13 (Continued)

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44				25				25			
43						24					
42	24		24							24	
41		24					24	24			
40					24						
39									23		
38				24						23	
37						23					
36			23								
35	23						23			22	
34											
33		23	22		23			23	22		
32				23						21	
31									21		28
30	22				22			22			
29			21							20	
28						22	22				
27		22							20		
26			20	22							
25							21	21	19		
24	21										
23				21		21				19	18
22	20		19	20	21		20				
21		21			20				18		
20				19		20		20			
19	19	20									
18			18				19				
17					19				17	18	
16									16		
15		19				19		19	15	17	16
14	18		17	18	18		18				
13			16							16	
12	17	18			17	18		18			
11			15				17		14		
10				17	16						
9		17				17		17			
8	16		14			16	16			15	
7		16						16			13
6		15		16	15	15	15	15			
5	15		13		14	14	14	13	13		
4	14	14	12		13	13	13	12	12	14	
3	13	12	11	15	12	12	12	11			
2	12	11	10	13	11	10		10	11	9	
1	10	10	9	11	9	8	11	7	10		
N	435	436	320	121	248	203	223	169	147	48	13
Mean	25.184	25.585	25.459	25.620	25.230	25.399	25.318	25.923	24.544	26.125	28.692
SD	5.825	5.836	6.954	5.427	5.961	5.980	5.859	6.538	6.580	7.513	8.199
SE	0.279	0.280	0.389	0.493	0.379	0.420	0.392	0.503	0.543	1.084	2.274
Range	43-6	43-8	44-7	36-11	43-6	38-8	41-11	44-7	39-10	42-9	39-13
Sk	-0.350	-0.225	-0.254	-0.354	-0.390	-0.319	-0.179	-0.216	-0.336	-0.128	-0.843
K	-0.027	0.098	-0.461	-0.545	0.286	0.030	-0.158	0.191	-0.661	-0.745	-0.215
Mdn	25.838	25.885	26.214	26.333	25.909	25.636	25.600	26.455	25.667	26.000	31.000
Mo	26.000	28.000	26.000	30.000	26.000	28.000	25.000	24.000	28.000	32.000	32.000

TABLE 14

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	37	40	42	38	37	38	41	42	40	40	32
98	36	38	41	36	36		40	41			
97	35		39	35	35	37	38	38	39	38	
96		37	38				37				
95				34							
94		36				36		37	38	37	
93	34						36				
92			37		34	35					
91								36	37	36	
90		35				34					
89	33		36				35				
88		34		33	33			35	36		
87											
86				32			34				30
85	32		35			33					
84									35		
83					32			34			
82											
81		33		31							
80										35	
79	31		34			32	33				
78								33			
77										34	
76		32			31				34		
75			33			31					
74										33	
73							32		33		
72								32			
71		31									27
70	30										
69				30							
68			32		30	30					
67							31	31	32		
66											
65											
64		30									
63											
62	29		31				30				
61											
60				29	29	29				32	
59								30	31		
58											
57		29									
56			30								
55								29			
54	28				28					30	
53											
52											
51									30		26
50						28	29				
49			29	28	27					29	
48	27	28									
47								28			
46						27			29		
45							28				

TABLE 14 (Continued)

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44											
43											
42			28								
41	26	27									
40				27	26						25
39						26		27	28		
38											
37											
36				26				26			
35		26	27				27				
34						25				28	
33											
32	25	25									
31			26		25				27		
30							26				
29						24		25			
28		34								25	
27				25							
26	24		25				25		26		
25					24		24	24		24	21
24			24						25		
23									24		
22					23	23					
21	23	23						23			
20					22		23				
19			23	24							
18									23		
17	22	22									
16			22				22	22			
15	21				21				22	23	
14		21				22	21				
13				23				21	21		
12	20	20	21		20		20				
11							19	20			20
10		19	20						20		
9			19	21	19			19			
8	19						18	19			
7		18	18					18			
6									19	22	
5	18	17	17	20	18		17		18		
4	17		16		17				17		
3	16	16			16	15	16	17	16	21	
2	15	15	15	19	15			16			
1	14	14	13		14	14	15		15		
	11	8	11	16	13	12		15	13	18	
				7	11	8	14	13	11		
								9	10		
N	405	393	327	123	237	203	183	184	138	35	7
Mean	27.222	27.954	28.942	27.302	27.249	27.315	28.415	28.212	29.152	29.857	25.857
SD	5.442	6.243	6.587	4.825	5.629	6.320	6.161	6.728	6.738	5.922	4.375
SE	0.270	0.315	0.364	0.435	0.366	0.444	0.455	0.496	0.574	1.001	1.654
Range	41-7	44-3	45-9	40-7	41-10	42-5	44-14	43-3	41-10	45-18	32-20
Sk	-0.626	-0.514	-0.450	-0.808	-0.574	-0.570	-0.261	-0.517	-0.598	0.141	-0.033
K	0.467	0.593	-0.022	2.241	0.061	0.503	-0.285	0.526	-0.010	-0.189	-1.001
Mdn	27.827	28.736	29.659	28.607	27.792	28.182	29.000	28.900	30.045	29.750	26.000
Mo	31.000	29.000	33.000	31.000	26.000	29.000	29.000	29.000	30.000	33.000	20.000

TABLE 15

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Boys

%ile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	143	134	116	148	143	137	135	121	119	115	118
98	146	136	118	149	145			122	120		
97	147	137	119		147		137	124	121		
96	148	138	120	150	148	140	138	127			
95	149	139	121	156	149	141	142	128	122		
94	150	140	122	157	150	142		129	123	119	
93	151	141	123	158	152	144		131	124		
92	153	142	124	159	153	145	143		126	120	
91	155	143	127	160	154	146		132	127		
90	156		128	161	156	147	144	133	128	121	
89	157	144	129	162	157		145	134	129		
88		145			158	148		135	130		
87	158	146	130	163	159		146	136	131	122	
86	159		131		160			137	132		
85	160	147		164	161	149	147				119
84	161	148	132				148	138	133		
83				165	162	150				129	
82	162		133	166	163				134		
81	163	149		168		151	149	139	135	130	
80	164		134		163	152	150	140	136		
79		150	135	169	165	153		141		131	122
78			136	170	166	154	151	142			
77		151		172	167	155			137		
76	165						152	143			
75	166	152	137		168		153	144		134	
74	167			173	169		154		138		
73	168	153	138			156	155	145			
72	169	154			170		156	146	139		
71	170	155	139	174	171		157	147	140	135	
70	171		140								
69		156		175		157					
68			141	176			157		141		
67	172	157			172	158	159	148		136	
66			142	177	173	159			142		
65	173	158	143		174	160	160	149	143		
64		159			175		161	150			127
63	174	160	144				162				
62	175				176	161	164	151	144	137	
61		161	145	178	178						
60	176	162	147	179		162		152	145	139	
59	177	163	148	180	179				146		
58					180		165	153	147	142	
57	178	164		181	182	163	166		148		
56	179			182	183		167			143	
55	180	165	149	183	184	164		154			
54	181		150	184	185	166	168	155	149		
53	182	167		185	186	167					
52	183	168	151			168	169	156	150	146	
51	184		153			169	170		151		
50	185	169		186	187		171	157	153	148	129
49				187	188		172				
48	186	170	154	188	189			158	154	151	
47	187	171				170	174	159			
46		172	155	189	190	171		160	155	154	
45	188	173	156	190		172	175	161	156		

TABLE 15 (Continued)

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Boys

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	189	174	157	192	191	173	177			155	
43	190	175		194	192	174	178		157		
42	191	176	158	195	193	175		162		159	
41	192	177	160	196	195	176	179	163	158		
40	194	178		197	196	177	180	164	160	162	
39	195	179	161	199		178			161		
38	196	180	162	200	197	179	181	165			133
37	197	181		201	200	180		166	162	163	
36	199	182		202	201	181	182		163		
35	200		163	203	202	182	183	167	164	166	
34	201	183	164	205		183	187		166		
33	202	184	165	206	203	184	188	168	168	169	
32	203	185	166	207			190	171	170		
31	204	188	167	208	204	185	191	172	172		140
30	205	189	169	209	205	187	192	173	173		
29	206	190	171		206	188		174	174	172	
28	207	191	173	210	207	189	193	175	175		
27	208	192	174	211	208	190	195	178	176	179	
26	209	193	175	212	209	191	196	179	177		
25	210	194	177	213	211	192		181	179	185	
24	212	195	178	214	212	193	197	182	180		
23	214	196	179	215	213		199	183	184	186	154
22		197	181	216	215	194	201	184	187		
21	215	198	184	217	217	196	202	185	189	189	
20	216	200	185	219	219	197	203	188	191		
19	219	201	187	221	221	198	204	191	192	192	
18	220	203	189	222	199	205	192	195			
17	221	205	192	223	224	200	209	194	196	210	
16	223	208	194	226	225	203	210	198	197		
15	225	210	197	227	227	210	214	203	201	222	164
14	227	213	199	230	229	213	219	205	202		
13	229	216	203	232	231	215	220	206	203		
12	230	220	205	235	232	216	222	208	204	227	
11	232	222	207	239	235	219	230	223	206		
10	235	224	210	240	236	221	231	215	215	239	
9	239	226	217	242	239	222	238	217	218		
8	242	231	219	244	245	223	244	220	220	244	
7	246	235	222	246	249	225	249	223	223		198
6	250	243	225	248	251	228	253	226	224	252	
5	252	249	231	250	257	238	257	231	235		
4	259	254	236	252	264	240	259	234	237	255	
3	268	259	252	265	268	245	265	236	270		
2	277	265	264	268	284	264	275	250	275		
1	312	277	275	277	320	286	282	265	319	263	
N	416	454	332	119	234	209	232	177	155	48	13
Mean	192.892	177.894	162.557	195.109	193.962	177.952	181.026	166.282	164.084	164.875	142.692
SD	37.570	32.951	35.845	30.691	36.179	33.514	38.278	32.049	38.077	43.135	30.057
SE	1.842	1.546	1.967	2.813	2.365	2.318	2.513	2.409	3.058	6.226	8.336
Range	140-448	124-293	111-329	148-297	140-421	137-408	128-448	120-291	116-329	111-269	118-207
Sk	2.251	1.546	1.537	0.825	1.768	2.332	2.178	1.267	1.709	1.079	1.377
K	10.130	0.933	2.922	0.325	6.710	10.587	9.723	1.661	3.685	0.123	0.836
Mdn	185.625	169.346	153.750	187.750	187.750	169.286	171.750	157.625	153.000	148.500	129.250
Mo	164.000	149.000	139.000	178.000	172.000	157.000	165.000	148.000	137.000	119.000	119.000

TABLE 16

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	152	140	124	136	148	148	138	121	135	126	
98	157	145	130	163	158	150	140	128	137		
97	160	148	122	166	160	153	141	130	138		
96	163	150	137	167	161	157	146	132	139		
95	164	152	138	168	164	158	148	138	141	132	
94	166	153	141	169	166	159	149	140	144		
93	168	154	142	170	167	160	151	143	146		164
92	169	156	143	171	168	162	152		147		
91	170	158	144	172	169	164	153		149	142	
90	171	159	145	173	171	165	154	144	150		
89	172	161	146	174	172	166	155	145	152		
88	173	162	148	175	174	167	156	147		143	
87	174	164	149	176			158	148	153		
86		165	151		175	169	159	149	154		
85	175	166	152	177		170	162	150		146	
84	176	167	154	178	176	171	163	152	155		
83	178	168	155	180	177		165	155	156		
82	179	169	156	184	178	172	166	157	157	156	
81	180		157		180	173	167	158	158		
80	181	170	158		181		168	159	159		
79	182	171	159	185	182	174	169		160	159	171
78	183	172	160	186	183	175		160	162		
77	184	173	161	187	184	176	170	161			
76	185	174	162	188	185			162	163	163	
75	186				186	177	171	163	164		
74	187	175	163	189	187	178	172	164	165		
73		176	164	190		179	173	165		164	
72	188	177	165	191	188		174	166	167		
71	189	178	166	192	189	180	175	167	168		
70	190		167		190	181		168		165	
69	191	179	168	193	191	182	176	169	169		
68									170		
67	192	180	169	194	192	183	179	170	171	170	
66	193		170		193	185	180	171	172		
65		181	171		194	186					
64	194	182				187		172	173	174	193
63			172	195		188		173	174		
62	195	183	173		195						
61	196	184			196		181	174	175	178	
60	197	185	174	197	197	189	182	175	176		
59		187	175	198	198	190			177		
58	198	188	176	199	199	191	183	176	178	181	
57	199		177				184		179		
56				200	200	192	185	177	180		
55	200	189	178		201	193	186		181		
54	201	190	179				187		182	184	
53			180	201	202	194	188	178	184		
52	202	191	181			195		179			
51		192	182		203	196	189	180	185		
50	203	193	183	203	204	197	190	182	186	187	194
49	204	194						183	187		
48					205	198	191				
47	205		185	204	206	199	192	184	188		
46		195	186		207	200	193	185	189		
45	206	196		205	208	201		186	190	188	

TABLE 16 (Continued)

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	207	197	187		209	202	194				
43	208		188	206	211	203		187			
42	209	198		207		204				192	
41	210	199	189		212	205	195	188	191		
40	211	200	190	209	213	206	196	189	192		
39	212	201	210	214	207	197	190	194			
38	213	202	191	211	215	208	198		196		
37	214	204		212	216	209	199	191	197		195
36	215	205	192	213	217	210			198	192	
35	216			216	218	211	200		200		
34	217	206	193		219	212	201	192	203		
33	218	207	194	217		213		193	204	194	
32	219	208	195	218		214	202	194	205		
31		209	196	219	220	215		195	207		
30		211	197	220			206	197		197	
29	220	212	198	221		216	207	198	208		
28	221	213	200		221	217	208		209		
27	222	214	201	222	222	218	209	199	212	199	
26	223	215	202	223	223	219	210	220	213		
25	224		203	224	225		213	202	214		
24	225	216	204	225	226	221	214	203	216	200	
23		217	206	226	227	222	215	204	218		
22	226	220	207		228	223	216	205	219		
21	227	221	209	227	229		217	206	220		
20	228	222	211		230	224	220	207	224		219
19	229	223	213	228	231	225	221	209			
18	231	225	214	230	232	226	223	210		203	
17	232	226	217	233	233	228	225	211	225		
16	234	228	218	235	234	229	226	213	226		
15	235	230	219	237	235	230	227	214		216	
14	237	232	220		236	232	229	215	227		
13	239	233	221		240	233	232	217	228		
12	240	235	224	239	242	234	234	218	229	217	
11	242	238	225	240	244	240	236	219	230		
10	246	241	227	243	246	243	239	220	231		
9	248	244	228	245	248	244	240	221	237	249	
8	250	245	230	250	250	245	244	222	238		
7	254	247	234	254	253	246	245	228	243		275
6	259	256	242	256	259	256	249	231	250	271	
5	262	260	249	260	265	260	262	234	262		
4	268	270	266	265	270	268	263	243	266		
3	273	277	274	266	272	288	272	247	278	287	
2	287	292	278	286	277	296	277	270	287		
1	294	315	293	297	289	315	290	297	294	294	
N	386	409	333	114	232	216	186	191	140	33	7
Mean	207.166	198.782	186.538	208.395	207.694	202.500	194.769	185.408	191.543	189.515	201.571
Sd	29.777	36.344	35.080	29.678	29.815	35.163	33.664	36.987	35.946	39.999	37.004
SE	1.516	1.797	1.922	2.780	1.957	2.393	2.468	2.676	3.038	6.963	13.986
Range	147-311	137-416	115-373	154-306	147-311	142-397	137-345	115-416	133-298	126-294	164-275
Sk	0.687	1.669	1.136	0.910	0.601	0.610	1.007	2.154	35.946	1.041	1.466
K	0.611	5.047	2.811	1.124	0.391	5.303	1.841	10.435	3.038	1.282	2.575
Mdn	203.833	193.143	183.625	203.500	204.700	197.333	190.167	182.000	186.500	187.250	194.000
Mo	195.000	189.000	191.000	185.000	220.000	189.000	181.000	192.000	191.000	187.000	164.000

TABLE 17

Percentile Norms and Other Normative Data
for Self Concept * for Boys

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	75	76	78	73	76	78	76	78	76	72	72
98		75	75	72	75	77	75	76	75	71	
97	74	74			74	76	74	73			
96	73	73	74			75	73	74	74		
95		72	73			74	72	73	73		
94	72				73	73			72	70	68
93			72	71	72	72	71	72			
92	71	71					70	71	71	69	
91		70	71						70		
90	70					71		70		68	
89			70	70	71	70			69		
88		69			70		69			67	
87			69					69	68		66
86		68				69					
85	69			69							
84					69	68	68		67	66	
83	68		68	68				68			
82		67			68		67		66		
81	67			67		67					
80								67		64	62
79	66	66	67	66	67		66		65		
78					66	66		66	64	63	
77				65			65				
76	65		66						63		
75		65		64	65	65	64	65	62	62	61
74				63							
73		64	65			64	63		61		
72	64				64			64		61	
71			64			63	63		60		
70	63	63		61	63	63		63		61	60
69			63				62		59	60	
68					62	65		62			
67	62			60			61		58	57	
66		62			61	61		61			
65	61						60		57	56	
64		61		59	60	60		60			
63							59		56	55	54
62	60	60	61		59	59		59			
61				59			58		55	54	
60					58	58		58			
59							57		54	53	
58	59	59	60	58	57	57		57			
57							56		53	52	
56					56	56		56			
55		58		57			55		52	51	
54	58		59		55	55		55			
53				56					51	50	
52		57			54	54		54			
51			58	55			54		50	49	
50		56			53	53		53			
49	57			54			53		49	48	
48					52	52		52			
47		55	57	53			52		48	47	
46	56				51	51		51			
45			56	52			51		47	46	

TABLE 17 (Continued)

Percentile Norms and Other Normative Data for Self Concept * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	55	54		56	55					53	
43							54		54		53
42					54	54		56			
41	54	53	55				53				
40								55	53	52	
39				55							
38		52			53	53	52				
37	53		54					54	52		
36				54		52					52
35		51			52					50	
34	52		53	53		51	51		51		
33								53		49	
32			52		51				50		
31	51	50						52		48	
30				52		50	50				
29	50	49	51		50		49	51			40
28						49					
27	49		50	51	49					47	
26		48			48			50	48		
25						48	48			46	
24	48	47	49	50					47		
23		46			47	47	47	49			
22						46	46		46		
21	47		48	49							28
20		45			46		45	48			
19	46	44	47			45			45	45	
18				48	45		44	47			
17	45		46			44				39	
16		43		47	44		43	46	44	38	
15	44		45							37	
14		42		46			42			36	25
13	43		44	45	43	43	41	45	43	35	
12		41	43	44			40	44	42		
11	42	40	42	42	42	42	39	43	41		
10	41	39	40	39	41	41	37	42	40	34	
9	39	37	39	38	40	40	36	41	39	33	
8	37	36	38	37	38	39	35	40	38	32	
7	36	35	37	36	37	37	33	39	37	31	23
6	35	34	36	34	36	35	31	38	36	30	
5	34	32	34	32	35	34	29	37	34		
4	32	31	32	31	33	33	28	36	32	29	
3	29	29	30	30	31	30	26	34	31		
2	24	26	26	29	24	27	22	33	26	21	
1	22	22	23	24	22	20	21	28	23		
N	431	502	340	123	253	230	250	192	162	48	14
Mean	56.343	55.586	57.006	56.820	56.482	56.300	55.500	57.755	55.685	53.917	51.714
SD	11.822	12.222	11.740	11.085	12.059	12.106	12.640	10.995	11.516	12.537	16.302
SE	0.569	0.545	0.637	1.004	0.758	0.798	0.799	0.793	0.905	1.810	4.357
Range	77-18	79-15	79-21	75-24	77-18	79-17	77-15	79-26	78-23	72-21	72-23
Sk	-0.629	-0.556	-0.618	-0.745	-0.575	-0.520	-0.677	-0.458	-0.429	-0.689	-0.809
K	0.213	-0.030	0.147	0.336	0.080	0.103	0.121	-0.211	-0.077	-0.124	-0.664
Mdn	57.684	56.591	58.250	58.000	57.769	57.500	56.667	59.000	56.375	55.000	54.500
Mo	58.000	63.000	60.000	60.000	58.000	44.000	52.000	61.000	56.000	46.000	60.000

* 80 Maximum score for Piers Harris Self Concept Scale

TABLE 18

Percentile Norms and Other Normative Data
for Self Concept * for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	77	78	77	77	77	79	77	77	77	77	80
98	76	76	76	75	76	77	76	76	76		
97	75	75	75	74	75	76	75	75	73	76	
96			73			75			72		
95	74	74	72			74	74	74	71		
94	73		71	73	74			73		73	
93	72	73		72	73	73	73	72	70		
92			70		72	72	72	71			
91	71	72		71	71		71			70	
90		71				71		70	69		
89	70		69		70	70	70			69	
88		70		70		69		69			
87		69									
86				69		68	69	68			58
85	69	68	68						68		
84					69	67	68	67			
83				68							
82	68	67	67								
81				67	68			66	67		
80						66				68	
79	67	66	66				67		66		
78						65					
77					67			65		67	
76		65	66				66		65		
75	66				66						
74				66		64		64		65	
73		64					65				
72	65		64		65			63	64		
71				65		63					57
70		63	63				64				
69								62	63	64	
68							63				
67	64	62	62		64	62					
66							62		62	63	
65	63			64	63			61			
64		61		63							
63			61			61	61	60		60	
62				62					61		
61	62		60					59			
60		60				60	60		60	59	
59			59		62			58			
58	61	59		61		59					
57							59		59		
56				60	61			57			
55			58				58				
54	60	58		59		58				58	
53								56	58		
52			57				57				
51		57		58	60					54	56
50	59		56			57		55			
49		56					56		57	53	
48	58					59			56		
47			55	57		56					
46									55		
45	57	55					55	54			

TABLE 18 (Continued)

Percentile Norms and Other Normative Data
for Self Concept * for Girls

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44					58						
43			54			55				52	49
42		54			57			53			
41	56			56		54			54		
40			53	55			54			51	
39				54	56				53		
38	55	53									
37	54					53	53	52		50	
36		52	52	53	55			51	52		
35				52		52	52				
34	53			51	54						
33		51	51			51		50			
32	52					50	51		51		
31		50			53					48	
30	51		50	50		49		49	50		
29		49			52				49		48
28	50		49				50	48	48		
27				49	51	48	49	47			
26	49	48	48	48		47				46	
25	48	47			50			46	47		
24			47				48				
23							47		46	45	
22	47	46	46		49	46	46	45			
21					48	45		44			
20		45		47			45	43	45	44	
19	46		45		47	44	44		44		
18		44	44	46			43		43		
17	45	43	43		46	43	42	42		43	
16							41				
15	44	42	42	45			38	41	42		
14		41			45	42	37	40	41	42	42
13	43	40	41		44	41	36	39	40		
12		39	40	44	43		35		39		
11	42	38	39		42			38	38	40	
10	41	36	38	43	41	40	34	37	37		
9	40	35	37		40	39		35	36	39	
8		34	35		39	38		34	35		
7	39		34	42	38	36	33	33	34		
6	38	33	33	40	37	34	31	32	33	37	
5	36	32	32	39	36	33	28	31	32		
4	34	30	31	38	35	32	26	29	30		
3	32	27	29	37	32	30	24	28	27	29	
2	30	25	27	33	30	28	23	27	25		
1	25	23	24	31	21	25	20	25	21		
N	407	461	352	124	245	242	212	204	149	35	7
Mean	57.435	55.751	55.682	57.774	58.020	56.091	55.538	55.010	55.544	55.914	52.857
SD	11.740	12.804	12.140	10.790	11.719	12.118	13.550	12.546	12.389	12.200	6.594
SE	0.582	0.596	0.647	0.969	0.749	0.775	0.931	0.878	1.015	2.062	2.492
Range	79-12	80-11	78-21	79-31	78-12	80-25	79-11	78-24	78-21	78-29	60-42
Sk	-0.621	-0.539	0.491	-0.211	-0.807	-0.365	-0.710	-0.378	-0.645	-0.107	-0.691
K	0.153	-0.044	-0.259	-0.797	0.772	-0.337	0.091	-0.438	-0.127	-0.773	-0.865
Mdn	59.313	56.909	56.625	58.167	60.111	57.500	56.833	55.625	57.750	54.000	56.000
Mo	65.000	56.000	53.000	48.000	63.000	54.000	68.000	53.000	55.000	69.000	42.000

*80 is maximum score for Piers-Harris Self Concept Scale

TABLE 19

Percentile Norms and Other Normative Data
for Reading " for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	25	20	20	25	25	23	20	20	20	20	20
98						21				19	
97											
96						20					
95											
94											
93										18	19
92											
91	24										
90					24						
89											
88											
87				24							
86									19		
85		19								17	18
84											
83			19	23		19					
82	23										
81								19	19		
80											
79											
78					23						
77											17
76										16	
75											
74											
73		18									
72				22			18				
71								19		15	
70	22					19					
69											15
68			18							14	
67									18		
66											
65											
64					22						
63		17						17			
62							17				14
61	21										
60				21							
59			17			17					
58											
57											
56									17	13	
55											
54											
53											
52											
51	20	16		20	21		16		16		12
50						16		16			
49										12	
48											
47			16								
46										11	7
45		15		19							

TABLE 19 (Continued)

Percentile Norms and Other Normative Data
for Reading * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	19				20		15			10	
43									15		
42											
41			15					15			
40						15					
39									14		6
38			14							9	
37		14			19			14			
36	18						14		13		
35											
34				18						8	
33						14			12		
32	17	13	13							7	
31							13	13			5
30											
29				17	18				11		
28		12									
27			12			13	12			6	
26	16							12			
25					17						
24		11	11	16		12	11				
23	15										
22		10					10		10	5	
21	14		10		16			11	9		
20											
19				15	15	11		10			
18	13	9									
17			9		14	10	9			4	
16	12	8	8				8		8		
15				14	13		7	9			0
14				13		9		3	7		
13			7	12	12	8	6				
12	10	7		11	11		5				
11			6	10					6		
10	9	6		9						3	
9	8			8				7			
8		5	5		10		4		5		
7	7			7		7	3	6		2	
6		4	4		9						
5	6			6	8	6		5	4		
4		3	3		7			4		1	
3	5		2	5	5	5	2	3	3		
2	3	2	1	3	4	3	1		1	0	
1	1	1		1	3	1	0	0			
N	320	434	248	100	188	203	205	157	99	41	13
Mean	18.644	14.615	14.798	18.890	19.511	15.404	14.576	15.000	14.545	11.268	10.615
SD	5.592	5.041	5.223	5.523	5.177	4.578	5.405	4.817	5.286	5.661	7.124
SE	0.314	0.242	0.332	0.552	0.378	0.321	0.378	0.384	0.531	0.884	1.976
Range	25-1	20-0	20-0	25-1	25-3	24-1	20-0	20-0	20-1	20-0	20-0
Sk	-1.140	-0.984	-1.045	-1.294	-1.313	-0.901	-1.036	-1.062	-0.848	-0.302	-0.187
K	0.532	0.048	0.119	1.256	1.104	0.243	0.003	0.466	-0.424	-1.138	-1.473
Mdn	20.386	16.064	16.722	20.125	21.100	16.475	16.333	16.524	16.429	12.667	12.000
Mo	23.000	20.000	20.000	25.000	23.000	19.000	20.000	20.000	19.000	14.000	0.000

* 25 is maximum score for second grade; 20 in fourth and sixth grades for Georgia CRT.

TABLE 20

Percentile Norms and Other Normative Data for Reading * for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	25	20	20	25	25	25	20	20	20	19	18
98						24					
97						21					
96						20					
95											
94											
93											
92											
91											
90											
89										18	
88											
87											
86											
85										17	
84											
83				24							17
82	24				24						
81		19									
80							19				
79											
78											
77											
76								19			
75			19			19			19		
74										16	
73											
72											
71											
70											
69											
68				23							
67	23										16
66											
65					23		18				
64		18									
63											
62											
61								18			
60											
59										15	
58			18								
57											
56											
55									18		
54											
53											
52											
51	22	17		22		18					
50							17			14	13
49								17			
48			17		22				17		
47											
46											
45			16				16				

TABLE 20 (Continued)

Percentile Norms and Other Normative Data
for Reading * for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44				21		17					
43											
42	21										
41								16		13	
40											
39							15				
38		15		20							
37										11	
36	20		16		21	16					
35							14		16		
34											
33								15	15	10	10
32		14									
31	19		15		20						
30						15					
29									14		
28				19	19		13				
27								14			
26			14								
25							12				
24	18	13							13		
23						14					
22				18	18				12	9	
21	17		13								
20		12						13	11		
19	16		12	17	17		11			8	
18	15			16							
17			11		15	13					3
16		11						12	10		
15	14		10	15							
14	13				14			11			
13				14	13	12		10			
12	12				12						
11	11	10		13		11	10			5	
10			9					9	9		
9	10	9	8	11	11	10	9	8			
8		8			10			7	8		
7				10		8				4	
6	9	7	7		9		8	6	6		
5	8		6		8		7				
4	7	6	5		7	7	6	5	5	2	
3	4	5	4	9	4	6	5				
2	3	4	3	4	3	3	4	4	4		
1	2	2	2	3	2	2	3	2	3		
N	306	402	247	100	180	199	184	142	110	27	6
Mean	20.216	15.843	16.154	20.460	20.500	16.789	15.668	16.085	16.100	13.000	12.833
SD	5.409	4.165	4.397	4.877	5.396	4.063	4.225	4.377	4.424	4.756	5.636
SE	0.309	0.208	0.280	0.488	0.402	0.288	0.311	0.367	4.442	0.915	2.301
Range	25-1	20-2	20-0	25-3	25-1	25-2	20-2	20-0	20-3	19-2	18-3
Sk	-1.535	-1.168	-1.371	-1.553	-1.714	-1.200	-1.008	-1.449	-1.188	-0.730	-1.226
K	1.743	0.821	1.205	2.140	2.393	1.834	0.373	1.699	0.416	-0.283	1.054
Mdn	22.258	17.167	17.696	22.045	22.600	18.021	17.000	17.618	17.786	14.125	13.500
Mo	25.000	20.000	20.000	25.000	25.000	20.000	20.000	20.000	20.000	14.000	3.000

* 25 is maximum score for second grade; 20 in fourth and sixth grade for Georgia CRT.

TABLE 21

Percentile Norms and Other Normative Data
for Mathematics * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	20	20	20	20	20	20	20	20	20	19	19
98										17	
97											
96											
95			19						19	13	
94											
93											
92								19			17
91			18								
90										12	
89								18		11	
88									18	10	
87						19					
86			17	19							
85		19									13
84											
83	19								17		
82			16				19	17			
81									16	9	
80											
79				18							
78					19					8	
77											12
76								16			
75			15						15		
74											
73											
72	18	18	14			18					
71											
70									14		
69							18	15			10
68											
67			13		18						
66										7	
65						17					
64		17	12					14	13		
63									12		
62											9
61											
60	17		11				17	13			
59									11		
58											
57											
56		16								6	
55			10	17							
54							16				
53											
52								12			
51					17	16			10		7
50			9								
49		15					15			5	
48								11			
47									9		
46				16				10			6
45	16		8								

TABLE 21 (Continued)

Percentile Norms and Other Normative Data
for Mathematics * for Boys

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44						15					
43											
42									8		
41		14						9			
40					15						
39			7				14				5
38	15			15							
37						14					
36									7		
35		13									
34					15					4	
33							13	8			
32			6	14							
31	14					13			6		
30		12									
29							12				
28											
27			5								
26		11		13				7			
25	13				14	12	11		5		
24											
23		10									4
22							10				
21			4			11		6	4		
20		9			13					3	
19							9	5			
18	12			12							
17						10	8				
16		8									
15	11				12		7		3	2	1
14								4			
13			3	11		9					
12		7			11	8	6				
11	10							3			
10		6		10							
9	9						5			1	
8		5	2			7					
7	8			9	10	6			2		0
6	7	4		8	9						
5	6			7	8		4	2			
4	5	3	1	5	6	5					
3					5	4	3				
2	4	2		2	4	3		1	1	0	
1	2	1			1	2	2	0	0		
N	329	43	248	100	188	203	205	157	99	41	13
Mean	15.714	14.394	10.137	15.650	16.277	14.946	14.556	11.484	10.455	6.488	8.308
SD	4.114	5.097	5.689	3.936	3.794	4.467	5.175	5.575	5.814	4.142	5.765
SE	0.227	0.245	0.361	0.399	0.277	0.314	0.361	0.445	0.584	0.647	1.599
Range	20-1	20-0	20-0	20-2	20-1	20-1	20-0	20-0	20-0	19-0	19-0
Sk	-1.259	-0.842	0.154	-1.363	-1.413	-0.961	-0.850	-0.149	-0.095	-0.057	0.467
K	1.265	0.268	-1.169	1.950	2.083	0.225	-0.364	-1.107	-1.243	1.461	-0.470
Mdn	16.924	15.661	9.571	16.944	17.292	16.048	15.750	11.938	10.801	5.667	7.000
Mo	20.000	20.000	5.000	18.000	20.000	19.000	20.000	9.000	3.000	4.000	5.000

* 20 is maximum score for Georgia CRT.

TABLE 22

Percentile Norms and Other Normative Data
for Mathematics * for Girls

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	20	20	20	20	20	20	20	20	20	19	8
98											
97											
96								19		14	
95											
94			19								
93									19	13	
92								18			
91											
90											
89										11	
88											
87			18								
86											
85											
84		19		19		19					
83								17			
82	19		17				19		18	9	
81											
80											
79					19						
78									17	8	
77			16								
76								16			
75											
74									16		
73			15								
72							18				
71		18		18							
70								15	15		
69	18										
68			14								
67				17		18					
66					18				14	7	
65											
64											
63											
62			13				17				
61		17						14	13		
60											
59											
58	17		12	16							
57											
56						17			12	6	
55											
54		16					16	13			
53			11								
52											
51											6
50						16					
49			10	15	17			12	11		
48	16	15								5	
47							15				
46											
45			9	14				11	10		

TABLE 22 (Continued)

Percentile Norms and Other Normative Data
for Mathematics * for Girls

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44										4	
43						15					
42	15										
41		14	8				14	10	9		
40				16							
39											
38						14					
37		13					13	9	8	3	
36											
35	14			13							
34			7		15	13					
33							12				4
32											
31								8			
30		12	6								
29	13								7		
28								7			
27							11				
26					14	12					
25		11							6		
24			5	12					5		
23					13		10				
22	12	10						6			
21						11					
20				11							
19						10			4		
18		9	4	10			9				
17					12						0
16	11								3		
15			3			9	8				
14	10	8						5			
13				9							
12											
11	9				11	8				2	
10		7		8							
9	8				10	7	7				
8				7							
7	7			6	9	6			2	1	
6	6	6	2		8			4			
5				5		5	6	3			
4	5	5			7	4			1		
3	4	4	1		6		5				
2	3	3		1	3	3	4	2	0		
1	2	2	0		2	2	3	1			
N	306	402	247	100	180	199	184	142	110	27	6
Mean	15.435	14.714	10.789	14.780	16.189	15.106	14.674	11.866	11.236	6.370	5.333
SD	4.351	4.719	5.850	4.556	3.902	4.670	4.698	5.162	6.046	4.343	3.011
SE	0.249	0.235	0.235	0.456	0.291	0.331	0.346	0.433	0.576	0.836	1.229
Range	20-1	20-1	20-0	20-1	20-2	20-1	20-2	20-1	20-0	19-1	8-0
Sk	-1.092	-0.729	0.003	-0.912	-1.329	-0.947	-0.623	-0.199	-0.124	1.162	-1.270
K	0.701	-0.471	-1.260	0.461	1.544	0.060	-0.738	-1.179	-1.224	1.356	1.531
Mdn	16.679	15.870	10.792	15.611	17.534	16.464	15.885	12.643	11.643	5.750	6.000
Mo	20.000	20.000	3.000	20.000	20.000	19.000	20.000	15.000	19.000	3.000	6.000

* 20 is maximum score for Georgia CRT.

APPENDIX A: Test Battery

Test Source	Performance Variables
Minnesota Motor Performance	SOCCER WALL VOLLEY (Eye-Foot Coordination)
Minnesota Motor Performance	JUMP AND REACH (Power)
Minnesota Motor Performance	600 YARD WALK-RUN (Endurance)
AAHPERD Health Related Physical Fitness Manual (1980)	SIT UPS (Abdominal Muscular Strength and Endurance)
AAHPERD Health Related Physical Fitness Test Manual (1980)	SIT AND REACH (Flexibility of Lower Back and Posterior Thigh)
Texas Physical Fitness-Motor Ability Test	ZIG ZAG RUN (Running Agility)
Texas Physical Fitness-Motor Ability Test	FLEXED ARM HANG (Arm Muscular Strength and Endurance)
Thomas and Chissom	SHAPE-O-BALL (TUPPERWARE) (Perceptual-Motor Tasks for Shape Recognition, Perceptual Match, and Eye-Hand Coordination)

APPENDIX B: Test Rotation

Station	Variable
1	JUMP AND REACH
2	SIT UPS
3	SHAPE-O-BALL
4	ZIG ZAG RUN
5	FLEXED ARM HANG
6	SOCCER WALL VOLLEY
7	SIT AND REACH
8	600 YARD WALK-RUN

APPENDIX C: Test Instructions

1. JUMP AND REACH

Purpose: The test measures the muscular power of the legs. It is often known as the test of explosive power.

Equipment: Jump-reach board or poster paper taped to the wall. Chalk (one inch in length) and a yard stick.

Marking: On the jump-reach board, or poster paper, mark off (in intervals of 1 inch) a length of 24 inches or more.

Directions:

a. Pupil faces the wall with toes touching the wall and with both hands extended overhead.

b. Reach evenly with both hands and mark the height of the reach with a piece of chalk.

c. Turn sideward to the wall (right or left side). Jump and reach with one hand to touch as far up the board or poster paper as possible, marking the height of the reach with chalk. The distance between the first and second marks on the wall is measured with a yard stick. The score is the difference between the reach while standing and while jumping.

d. Chalk should be held between the thumb and forefinger and should not extend beyond the forefinger.

e. Jump must be made from both feet without a hop or a double jump.

Number of Trials and Scoring:

a. Three successive trials are allowed.

b. Record scores to the nearest half inch. Record the best jump only.

Suggestions:

a. A number of chalkboards or sheets of poster paper can be attached to the wall at varying heights, depending upon the height of the pupils.

b. A yard stick can be used to measure the distance between the reach and the jump and reach.

c. Mark off the inches on each chalkboard or poster paper in order to eliminate measuring each student.

d. Leader stands on a chair near the chalkboard and indicates the number of inches jumped. Record the best jump only.

2. SIT UPS

Purpose: The purpose is to test abdominal strength and endurance.

Test Description: The pupil lies on his back with knees flexed, feet on floor, with the heels between twelve and eighteen inches from buttocks. The pupil crosses arms on chest placing hands on the opposite shoulder. His feet are held by his partner to keep them in touch with the testing surface. The pupil, by tightening his abdominal muscles, curls to the sitting position. Arm contact with the chest must be maintained. The sit-up is completed when elbows touch the thighs. The pupil returns to the down position until the midback makes contact with the testing surface.

The timer gives the signal "ready go", and the sit-up performance is started on the word "go." Performance is stopped on the word "stop."

The number of correctly executed sit-ups performed in sixty seconds shall be the score. Rest between sit ups is allowed, and the pupil should be aware of this before initiating the test.

Rules:

a. Buttocks must remain on the floor.

b. Fingers must remain in contact with shoulders.

Equipment: Mat or other comfortable surface, a stop watch, 3-4 eighteen inch strings and masking tape.

Scoring: Record the number of correctly executed sit ups that the pupil is able to do in sixty seconds.

Administrative Suggestions:

a. Because of the importance of the heel placement in relation to the buttocks, the teacher may wish to use a yard stick or precut measured yard to determine this distance.

b. The supervising tester acts as the timer.

c. Partners will count and record each other's score. The supervising tester must carefully observe to assure that the sit ups are being done correctly.

d. The partner is to keep the feet in contact with the testing surface. The partner may hold the feet, the ankles or the calves.

e. The pupil should remain in the curled position for each repetition (with head held forward).

3. SHAPE-O-BALL TEST

Introduction: The test is designed to measure certain perceptual-motor abilities (shape recognition, perceptual match, and hand-eye coordination) which closely relate to academic readiness.

Administration: The test is to be administered individually and is not designed as a group test. The test administrator should place the Shape-O-Ball directly in front of the subject on a table of adequate height for the subject's age. The pieces should be scattered randomly at a point behind the ball, and the subject seated comfortably at the table.

The administrator should explain the task (place the pieces in the holes as fast as you can) and then let the subject practice until he/she indicates that he/she understands what is to be done.

Let the subject perform 3 trials with each trial being timed to the nearest second with a stopwatch. The timing should start when the administrator says "begin" and end when the last piece is successfully placed in the ball. If any trials exceed 4 minutes, the subject should be stopped and the 240 seconds recorded as the time for that trial. A SUBJECT'S SCORE ON THE TEST IS THE SUM OF THE THREE TRIALS.

Equipment

Stopwatch, shape-o-ball, table and chair.

4. ZIG ZAG RUN

Purpose: To measure agility primarily and speed secondarily.

Facilities and Equipment: Stopwatch, five cones. Zig zag course arrows should be drawn on the ground to indicate direction.

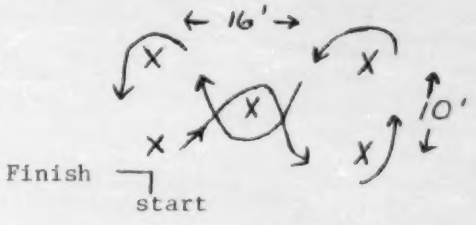
Directions: The event should be explained and demonstrated. A practice walk through should be taken by the student. The subject begins at the start and follows the prescribed course for three complete laps. The watch is stopped when the subject finishes his run at the end of the third lap.

Instructions: For the start of your run you may use a standing start. On the command to go, you run the prescribed course in a figure-of-eight fashion. Do not bump the cones as you round them and do not misplace them in any way. You complete three circuits of the course and continue to run past the finish mark. If you foul or fail to run the prescribed course, you will be required to run again.

Score: The final score is the elapsed time to the nearest tenth of a second which is required to run the prescribed course three times (i.e., one trial).

Testing Personnel: One trained assistant to supervise the testing station and to time and record the scores.

(See diagram)



5. FLEXED ARM HANG

Equipment: Stopwatch, chinning bar that can be adjusted in height, chair.

Directions: Bar should be placed at approximately same height as that of students being tested. Two spotters, one in front and one in back, help pupil raise his body so that chin is above bar. Elbows are flexed and chin close to bar. Feet must be clear of floor. If a chair is used, it should be removed immediately. Grip must be reverse hand grip facing body. Pupil holds this position as long as possible or ninety seconds.

Rules:

a. Start timing as soon as student is in proper position and released by spotters.

b. Stop timing when:

(1) chin touches bar
(2) head tilts back, or
(3) chin drops below bar

c. Knees may not be raised.

d. Legs may not be kicked.

e. Arm may be extended across performer's legs if legs start to swing.

f. Only one trial is permitted.

Scoring: Record to the nearest whole second, that the student maintains proper position.

6. SOCCER WALL VOLLEY

Purpose: The test determines how rapidly a rubber soccer ball can be kicked against a wall within a 30 second time interval. This skill represents the basic eye-foot coordination involving accuracy and control which is necessary in many kicking games.

Equipment: Well-inflated, regulation size, rubber soccer ball; stop-watch; flat walled surface; flat ground surface.

Marking: Draw a restraining line 6 feet from the wall.

Directions:

a. Begin behind the restraining line.

b. On the signal 'READY-GO', the ball is kicked against the wall as rapidly as possible for 30 seconds.

c. Any kind of kick may be used.

d. The hands may be used to retrieve the ball.

e. Any time the ball is kicked, the supporting leg must be behind or on the restraining line.

Number of Trials and Scoring: One pre-trial is allowed. Two trials are given with the sum of the two recorded. The score for each trial is the number of legal hits against the wall.

Suggestions:

a. Coach the pupils to use the feet to stop or trap the ball on the rebound whenever necessary. Bending over and using the hands to gain control only consumes time. Encourage the pupils to run after the ball when losing control.

b. Although any type of kick is allowed, using the inside of the foot permits better control.

c. Select a good wall area that is free of obstacles.

d. Try to allow 9 feet between pupils being tested.

e. Demonstrate the test first so that pupils can see exactly how the test is done. Assign duties for counting the number of fair hits, checking on the restraining line, and recording the score.

7. SIT AND REACH

Purpose: The purpose is to test the flexibility of the low back and posterior thigh.

Test Description: The pupil removes shoes and assumes the sitting position with the knees fully extended and the feet against the apparatus shoulder width apart. The arms are extended forward with the hands placed one on top of the other. The pupil reaches directly forward, palms down, along the measuring scale. In this position, the pupil slowly stretches forward four times and holds the position of maximum reach on the fourth count. The position of maximum reach must be held for one second with knees in full extension while the feet are in contact with the apparatus. The pupil receives one four count trial.

Equipment: The standard test apparatus shall consist of a bench or box with a measuring scale where 23 cm is at the level of the feet. The testing apparatus should be placed against a wall or other firm vertical surface.

Scoring: The score is the maximum distance reached measured to the nearest cm.

Administrative Suggestions:

a. The teacher can improve the validity and reliability of individual scores by providing sufficient time and instruction for warm-up. Slow sustained static stretching of the low back and posterior thighs preceding the test is suggested.

b. If the hands reach out unevenly, the test trial must be repeated.

c. If the knees become flexed, the trial must be repeated. The tester can monitor this by placing his hand lightly across the pupil's knees.

8. 600 YARD WALK-RUN

Purpose: The test measures cardiovascular endurance.

Marking: A square area (50 yds. x 50 yds.) is selected on a flat freshly mowed field.

Directions:

a. Use a standing start.

b. At the signal "READY-GO", the pupils start running and the watch is started. The running may be interspersed with walking.

c. A card is handed each runner when he/she crosses the finish line indicating order of finishing. At the same time the recorder marks the time in order as called by the timer on a scratch sheet.

d. Runners present their cards to recorder who registers their names/numbers beside their respective times.

Number of Trials and Scoring: One trial is permitted and the time is recorded in minutes and full seconds at the completion of three laps.

Suggestions:

a. Have the runners walk for a period of time after completing the test.

b. Try to select an area that is free from obstacles and that has as few turns as possible. If available, use a hard surface area.

9. THE PIERS-HARRIS CHILDREN'S SELF CONCEPT SCALE

Administration:

a. Before distributing the scale, the examiner should talk to the students about the value of finding out how boys and girls really feel about themselves, in order to help them, and the necessity, therefore, for a completely honest response rather than a socially desirable one. This could be phrased as "answer the items as you really feel you are, not as you think you ought to be or others want you to be." Use the example "Do you like ice cream?" It should be stressed that this is not a test, that there are no right or wrong answers, that results will not affect their school grades and that they will be kept confidential.

b. When the scale is distributed, the examiner should check to make sure every child has a pencil and then show the class where and how to fill out the identifying data. He should then have them turn to the instructions and read these aloud.

c. It should be stressed that the students should circle either yes or no for all items. There should be no double circles, even if some items are hard to decide. It has been found helpful to have a proctor go up and down the aisles to make sure all children are marking the items correctly and keeping up with the examiner.

d. The examiner should read each item clearly twice without haste, but not so slowly that second thought or distractions will occur. After a few items, the examiner can usually determine the optimal pace for that group. A few moments can be given at the end for slower members to finish.

e. One or two words in the scale may be difficult for younger groups (e.g., unpopular) but have been retained in that form to eliminate double negatives. These may be defined. It is also permissible to answer one or two questions at the beginning, particularly with reference to the all-or-none quality of the items. It should be explained that it is recognized that everyone feels differently at different times in different situations, but that they should mark the item the way they generally feel. Additional questions are usually unnecessary and should be discouraged.

10. GEORGIA CRT READING SCORE

11. GEORGIA CRT MATHEMATICS SCORE

APPENDIX D: References

American Alliance for Health, Physical Education, Recreation, and Dance. Lifetime health related physical fitness manual. Reston, Va.: AAHPERD, 1980.

Counselor Recordings and Tests. Piers-Harris children's self-concept scale. Nashville: Counselor Recordings and Tests, 1969.

Georgia criterion referenced test for reading, mathematics, and career education. Atlanta: The State Board of Education, 1981.

Hanson, M. R. Motor performance testing of elementary school age children. Unpublished doctoral dissertation, University of Washington, 1965.

Texas physical fitness-motor ability test. Austin: The Governor's Commission on Physical Fitness, n.d.

Thomas, J. R., & Chissom, B. S. Directions for the administration of the shape-o-ball test, a perceptual-motor task. Handout from studies using the shape-o-ball (Tupperware, a Division of Dart Industries, Orlando, Fla. 32802.)

Tupperware Educational Services. Shape-o-ball. Orlando, Fla.: Tupperware.